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**ST. LOUIS**

**COURIER OF MEDICINE.**

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COURIER OF MEDICINE ASSOCIATION

ST. LOUIS, MO.



# ST. LOUIS

## COURIER OF MEDICINE.

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### ANNOUNCEMENT.

#### CHANGE OF OWNERSHIP.

With the issue of January, 1907, the *COURIER OF MEDICINE* will be in charge of the *Courier of Medicine Association* which has purchased all my rights and interests in the *COURIER OF MEDICINE*. This Association is composed of St. Louis physicians, young, capable and energetic.

After publishing the *COURIER* for some thirty years, I retire from its management and from the field of medical journal work with deep regret, though comforted with the knowledge that the *COURIER* will continue to occupy the high position in the ranks of medical journals to which it has risen. In retiring from this field of work I desire to express my gratitude to those who have co-operated with me in conducting the publication and to its many patrons—advertisers, subscribers and contributors. I bespeak for the new management the continuation of this patronage, knowing that the interest of all will be subserved by the men who have bought the control of the journal.

Dr. John Zahorsky will continue Editor-in-Chief and will have associated with him a corps of active, competent and enthusiastic workers.

J. H. CHAMBERS.

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#### PUBLISHERS' ANNOUNCEMENT.

Notice is hereby given that all moneys due for subscriptions are to be paid to the new owners, the *Courier of Medicine Association* and all moneys earned and *due* on advertising up to and including the December, 1906, number are to be paid to J. H. Chambers, former owner and publisher of the *COURIER OF MEDICINE*, 318 North Garrison Avenue, St. Louis, Mo.

[Signed]

J. H. CHAMBERS,  
*Courier of Medicine Association.*





ST. LOUIS

COURIER OF MEDICINE.

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VOL. XXXVI.

JANUARY, 1907.

No. 1.

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EDITORIAL COMMENT.

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EDITORIAL ANNOUNCEMENT.

The management hereby announces that the ST. LOUIS COURIER OF MEDICINE has been sold to the *Courier of Medicine Association*, a company composed of a number of St. Louis physicians. The policy of the journal will be controlled entirely by physicians, and nothing derogatory to the interests of the medical profession and medical science will be permitted to have a place on its pages. The same editorial staff will have charge of the contents.

We take this opportunity in emphasizing once more the practical plan of the COURIER OF MEDICINE. It is the object of the journal to present a digest of practical medicine.

The whole medical world is searched in order to present the practical and theoretical science of medicine in a concise and interesting manner. We do not publish a mass of Original Articles written by local practitioners, this is left for the State Journal. Only one or two original articles, based on original research, appears in each number. In place of these we present Leading Articles, which give a summary of present knowledge on various medical topics. Especially interest-

ing should prove our department of Current Topics in which the gist of current editorial matter is presented.

Do not fail to watch our department entitled Yesterday and To-day. We dig up a lot of valuable thought from the literature of olden times.

In short, the COURIER OF MEDICINE tries to give the busy practitioner the cream of the past and present medical science, and no physician can afford to overlook this valuable feature of the journal.

Beginning with the February number we will publish a series of articles on "Practicing Medicine with the Elegant Preparations proposed by the 'National Formulary.'" This series of articles alone will be worth more than the price of the journal.

## LEADING ARTICLES.

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### LOOKING BACK.

#### A Brief Resume of the Literature of 1906.

By EDMUND A. BABLER, M.D.

St. Louis, Mo.

#### Medicine.

With the December days comes the desire to look back over the year's medical literature and separate the chaff from the grain, and ascertain just what has really been accomplished toward the prevention and cure of disease. The reader of the year's literature can not help but feel that Solomon was suffering an attack of gout when he asserted that "there was nothing new under the sun." Real advance in medicine does not necessarily mean the advancement of new theories; it more often means the presentation of conclusions based upon wide clinical experience.

In chronicling a few of the year's accomplishments we have attempted to refer briefly to findings of apparently decided value. The busy general practitioner has been foremost in our thought.

Ehrlich agrees with Jensen that for working purposes we may accept the assumption that the cancer cell may be regarded and handled as, in itself, a colony-forming parasite. The spontaneous disappearance of readily transplantable sarcomatous tumor on the genitals of dogs and the resulting immunity to further inoculations, as observed by Sticker, is regarded by Ehrlich as due to definite antibodies that act on various tumor cells. The results are considered encouraging. Jacobs and Geets attribute to Doyen's micrococcus neoformans a primoidal rôle in the development of malignant neoplasms. Wright is convinced that whatever opinions have been entertained about infection by Doyen's microbe, this microbe is a factor to be reckoned with in the treatment of malignant disease. In cases of inoperable cancer, Jacobi has found methylene blue of decided value in alleviating the pain and prolonging life. He administers the drug in pills, in small doses, 2 grains a day, and runs up slowly to 3, 4 and 6 grains a

day. The 2 or 4 grains should be made up in pills with a dose of  $\frac{3}{4}$  grain of extract belladonna daily. The belladonna relieves the dysuria. The secret of success in the treatment of cancer is *early, complete excision*. Whenever possible Roentgen treatment should *follow* excision. Trypsin has been found wanting.

Calmett and Breton found that tuberculous products, even when sterilized with heat, are liable to be dangerous for persons already infected with tuberculosis, and may not be entirely harmless even for healthy persons. Just how the tubercle bacilli reach the lungs remains an open question. Calmette emphasizes the importance of teaching consumptives not to swallow sputum. He feels sure that pulmonary tuberculosis is acquired by ingestion of bacillus-laden dust or other substances, not by inhalation. It is the consensus of opinion that both the food supply and the character of the inhaled air should be as pure as possible. Milk from tuberculous cattle should not be used even though Koch continues to maintain that infection by means of milk and meat of tuberculous cattle is a matter of minor importance.

Von Behring calls attention to the fact that it is commonly believed that he has an effectual remedy for human tuberculosis; he adds that this is erroneous. His "tulase" does act on existing tuberculous processes in such a way that the natural tendency to heal will not be interfered with by renewed tuberculous infection. For diagnostic purposes tulase can be employed in place of tuberculin. It can be given subcutaneously, intravenously or by the mouth. Von Behring continues to advocate immunization of children against tuberculosis by administering tulase, etc. At the present time von Behring's tulase is being tested clinically throughout Europe.

#### TUBERCULIN.

Last year we called attention to Wright's finding that bacterial vaccines must be administered only when the opsonic index is rising. His findings have received special attention throughout the world. He mentions the fact that we err when we think that in order to secure the greatest yield of protective substance it is necessary to give enough vaccine to produce a constitutional reaction of a marked character; Wright finds that small doses yield equally good, and often even better, results. He employs the new tuberculin in doses corresponding to from  $\frac{1}{1000}$  to  $\frac{1}{600}$  mg. of the tubercle powder. The treatment of tuberculous lymph nodes was so successful that Wright predicts the



abandonment of surgical and climatic methods in favor of tuberculin. Perhaps all of this will simmer down to the advocacy of excision of the gross lesion, when palpable, and the subsequent administration of tuberculin. Pardae has used tuberculin T. R. hypodermatically, beginning with a dose of 1/500 mg. and increasing the dose every other day until a definite reaction was obtained. He concludes that for vesical tuberculosis tuberculin is the best remedy at our disposal.

#### MARMORECK'S SERUM.

Hoffer has used the serum by rectal injection and has found it quite satisfactory. It is always retained and seemed to be fully efficacious; it may be given daily. Levin holds that the serum is not sufficiently potent to prevent the development of tuberculosis absolutely, but that it has the power of neutralizing tuberculous toxins and retards the action of the tubercle bacillus on the animal organism. He regards the serum of value. Roeves found that rectal injections do not cause a general reaction. Marmoreck advocates the use of the serum obtained by inoculating the horse with both the tubercle bacillus and the streptococcus, if hectic fever is present in an individual case. We may say that the serum—in fact, all tuberculous remedies on this order—remain in an experimental stage. The medical attendant must continue to recognize the disease at the earliest possible moment, and advocate fresh air, pure food and plenty of sunshine.

#### BLOOD VESSELS.

Shaw is of the opinion that the action of kidney substance when once it has reached the circulation and produces a rise of pressure provides us with an explanation of the common occurrence of hypertrophy of the middle coat of the arteries and of the heart. He holds that there is no experimental evidence indicating that mere elevation of blood pressure can cause degenerative changes in the blood vessels. Adrenalin, however, can cause widespread degeneration of the middle coat, development of atheroma, and even aneurism. Barr has recently stated that general arteriosclerosis is the consequence of general high arterial pressure, but that local increase of pressure which may result from emotional causes acts chiefly upon the circulation. Barr contends that Raynaud's disease depends really upon diminished blood pressure and not upon vasomotor spasm.

At present the only point of agreement between various observ-

ers as to the etiology of Stokes-Adams syndrome seems to be absence of any gross lesion by which the symptoms might be accounted for. Medea expresses the opinion that the syndrome is the result of a coincidence, namely, cerebral arteriosclerosis coinciding with some one of the causes of tachycardia, prominent among which must be mentioned arteriosclerosis of the medulla.

The recent experiments of Erlanger and others tend to corroborate the contention that the bundle of His transmits impulses from the auricles to the ventricles. Erlanger suggests atropin to steady the pulse in Stokes-Adams disease.

Wilson found that normally the voice sound is transmitted from the extreme right of the first interspace to at least half an inch from the sternal border; in aneurism of the arch of the aorta, however, this area extends some 5 cm. on either side of the mid-sternal line in the first interspace.

Russell expresses the opinion that angina pectoris is due to an exaggeration of the normal abdominal reflex which sets up peripheral vasomotor spasm. Alcohol and excesses of proteid food increase the vasomotor spasm. Russell thinks that the common factor in all cases is the hypersensitiveness of the vasomotor center. He advocates the exclusion of tobacco, alcohol and excessive proteid foods.

#### THE BLOOD.

Stahl describes a new form of *blood cell* which he found in a 6 weeks old ovum. It is a crescent shaped nucleated red-blood corpuscle. Stahl found the cell in the trabeculated tissue in the Baüch-stiel area of the chorion, in the amniotic cavity. He feels that his finding has some bearing on the origin of the non-nucleated red-blood corpuscles.

Experience proves the importance and correctness of Osler's finding concerning *polycythemia vera*. This disorder is now regarded as a definite clinical entity whose origin is to be sought in a disease of the bone marrow resulting in the production of an increased number of red corpuscles.

Rénon and Tixier obtained a clinical cure in a case of *pernicious anemia* by means of diphtheria antitoxin injections. The authors found that under radiotherapy a number of white globules were destroyed, forming leucolysins, which produce by excitation of the he-

matopoietic, augmentation of the number of red cells and the passage into the circulation of a very great proportion of eosinophiles. By injecting antitoxic serum the hemolysins produce exactly the same effect. They hold that the presence of leucolysins, or of hemolysins, seems to be the necessary factor to bring about the all-important reaction of the bony medulla.

#### RECURRENT ACUTE PULMONARY EDEMA.

Riesman calls attention to an edema that recurs from time to time, each attack seeming to place the patient in imminent danger of dissolution. The condition has been observed in association with chronic interstitial nephritis, arteriosclerosis, angina pectoris and asthma. When the affection is associated with a full bounding pulse, Riesman advocates bleeding. Hare regards the edema due to vascular spasm. Shattuck and others advocate nitroglycerin. Morphin has been found of benefit. Kennicutt favors adrenalin.

#### SUCCUSSION.

Chauffard mentions his finding that when the liquid is effused in large quantity and the air is compressed at the upper part of the chest, this splashing sound can not be elicited by shaking the patient while he is in the upright or sitting posture. Perfectly satisfactory results are attained by placing the patient in the dorsal or ventral decubitus.

#### THE STOMACH.

Tabler concludes that the *function of the stomach* is by no means only a digestive one. He finds that considerable absorption takes place in the stomach. Normally the stomach completely emptied itself in about 3 hours. Between 20 and 30 percent of the total quantity of meat ingested was absorbed in the stomach.

Considerable attention has been accorded the so-called "*desmoid reaction*." Monad claims that the main objection to the test is that it does not show when an excess of acid is present. Kuhn and others regard the test of great value. Einhorn has observed that the catgut is digested in the intestines as well as in the stomach, hence he does not consider the test suitable for the purpose claimed by Sahli. Alexander and Schlesinger contend that at all events one is not justified in trusting to the test alone in determining the functional activity of the gastric glands.

Medical men are awakening to the fact that the *motor activity* of the stomach can be quite accurately determined by means of administering bismuth and tracing the latter by the aid of the Roentgen rays. It has been found that it is thus possible also to detect the presence of a gastric ulcer, since the bismuth becomes lodged, as it were, in the ulcer.

It must be admitted that we do not possess reliable clinical or laboratory means whereby we can say in a given case that our patient has, or does not possess, a *gastric cancer*. Very recently, Moore has expressed the opinion that the frequent absence or reduction in amount of HCl in malignant disease is not dependent upon the localization of the growth in the stomach, but may be present wherever the cancer is situated; the diminished secretion is due to the altered pabulum supplied to the secreting gastric cells; this alteration in the pabulum might be a toxic agent affecting the cells or an alteration in the balance of the inorganic ions of the plasma.

It may be stated that whenever the medical attendant is suspicious of the presence of cancer of the stomach he should seek assistance; the diagnosis should be cleared up by exploratory incision as soon as possible, since we all know that there is no *medical treatment*, today, for gastric cancer; the patient's sole chance lies in an early diagnosis, and early excision of the diseased tissues.

Acute gastric ulcer is a purely medical disease. The medical treatment remains unchanged. More will be said later.

#### THE FEVERS.

The experiments of Brion and Kayser show that the intestinal tract is not a favorable soil for the settling of the typhoid bacillus. They regard it as difficult to imagine any circumstances which would render it possible for the bacilli to make their way primarily into the blood through the intestinal walls. They hold that typhoid fever does not always commence in the intestines, but may start as lymph and blood affections (probably entering by way of the tonsils); in their opinion the assumption that the symptom complex of typhoid fever as an etiologic entity must be abandoned. Conradi has found that typhoid bacilli in the blood can be demonstrated quite easily provided the blood is preserved in a fluid condition, thereby preventing the disinfectant action of certain substances which become active as a result of coagulation. Conradi prevents coagulation by means of bile;

in addition to bile his medium contains 10 percent peptone and 10 percent glycerin. The drop of blood from the patient's ear is removed by means of a capillary pipette containing a small quantity of bile fluid; it is then transferred into a small glass containing from 2 to 3 cc. of the peptone glycerin bile mixture; the proportion of blood added to the bile mixture must be as 1 to 3; the blood and bile mixture is then incubated for 10 to 16 hours, and culture made on agar plate according to Dregalski-Conradi formula. It is possible to make a diagnosis in from 26 to 32 hours.

Klinger finds that the percentage of successful diagnoses become higher if the culture method of Endo is adopted; the differential diagnosis between typhoid and coli colonies is brought out in from 18 to 24 hours; the one set of colonies are glassy, round, with a convex surface on which is seen a delicate rosy film; while the coli colonies are larger, dark red in color and have a greenish fluorescence. Stühlinger finds Fickler's suspension test a useful and generally reliable substitute for that described by Widal. There seems to be a general tendency to allow the typhoid patient a somewhat more liberal diet, but it is the consensus of opinion that great care must be observed. The serum treatment of Chantemesse continues favorable, according to its author; he gives small doses of calcium chlorid about the middle or end of the second week, to prevent hemorrhage.

The Antityphoid Inoculation Committee report favorably on the *antityphoid inoculation* as practiced in the army. The Committee found that the inoculations had resulted in a substantial reduction in the incidence and mortality from typhoid fever among the inoculated. Macfayden claims much for his *antityphoid serum* obtained from goats. In passing, I may add that McCrea has apparently resurrected *typhoid spine* from the list of merely functional disease. In McCrea's patient definite changes were found in the vertebræ, and the Roentgen ray pictures seemed to show that they were bony in character. In McCrea's opinion the infection may be severe enough to produce suppuration; the severity of the symptoms is not always a reliable index of the extent of the pathologic changes.

Clemens calls attention to Manson's finding that the presence of pigmented leukocytes in the peripheral circulation renders the diagnosis of *malaria* quite simple. Light yellowish or red pigment denotes a simple type of malarial infection, while jet black is indicative of the



presence of the estivo autumnal parasite. The number of pigment granules bear some relation to the duration of the disease.

Koch's researches have corroborated the findings made by Dutton and Todd. Koch found that *relapsing fever* is evidently due to the spirocheta mentioned by Dutton and Todd; the ornithodoras monbata is the species of tick particularly associated with the spirocheta in question. The disease can be prevented by bearing in mind the fact that the ticks do their work at night and never travel far away from the dry earth of the infected huts where they breed; by sleeping 40 yards away from any spot which has been previously used as a camping ground the traveler need not fear infection. Christophers has traced the piroplasmata into the salivary glands of the nymphæ of the ticks—that is, into the second generation or stage of development of these creatures.

Marchaux and Simond have shown that stegomyia fasciata can transfer the materies morbi of *yellow fever* to its own offspring. This finding may clear up the cause of recrudescence of the disease in a focus where it has recently been extinguished. The writers believe that in the passage of the virus from one generation of stegomyia to the next an attenuation of the virulence may take place. When the infected insects are kept at a temperature as low as 20°C. they appear to lose the power of transmitting the infection. The serum of an infected person commences to exhibit preventive properties on the 8th day, and the serum of convalescents possesses not only a preventive but also, to a certain extent, a curative efficacy.

The fourth report of the Commission appointed for the investigation of *mediterranean fever* shows that cows, mules and dogs, as well as goats, suffer naturally from the disease throughout the island of Malta, and further, that monkeys and goats can be infected by feeding them on milk drawn from an infected animal. The principal mode of propogation of the disease remains, however, an unknown question.

Grant and others have observed *sleeping sickness* in localities where it was commonly supposed not to exist. At the International Medical Congress, Martin classified the diseases of man caused by trypanosomes as—1, trypanosome fever; 2, sleeping sickness, and 3, kala-azar. Against the view that the Donovan-Leishman bodies were piroplasms, he contended that the work of Rogers and Chatterjee tended to show that they were really trypanosomes. Laveran strongly

objects to this classification; he maintains that the Donovan-Leishman bodies are piroplasms and should not be classed among the trypanosomes. Rogers reaches the conclusion that the organism of kala-azar belongs to the genus *hepatomonas* and not to the trypanosomes, and he suggests the name, *hepatomonas* of kala azar. Todd believes that Europeans have been apparently immune because of their relatively small number present in the infected regions and because of the protection offered by their clothing.

Klein reports that experiments prove that the dried organs of animals dead from *plague* contains a powerful plague toxin which, in appropriate doses, may serve as a prophylactic. He has made extensive experiments with the prophylactic in question and has obtained quite satisfactory results. The cost is normal and the technic simple. Kolle and Strong conclude that the future holds much in store for us in so far as the plague is concerned. They believe that in the future we may be able to protect against the plague as efficiently as we now do against smallpox. Vaccination in so far as animals are concerned is the most effectual form of inoculation (Strong). Bannerman's statistics show that the various serums have been found wanting.

Ricketts' researches show that *Rocky Mountain fever* is communicable to guinea-pigs and monkeys on inoculation of the blood of patients. He was not able to confirm the observations of Wilson and Chowning of the occurrence of a piroplasma in the blood of patients or of animals inoculated with the disease. Ricketts has, however, been successful in preserving the disease by inoculating alternately a guinea-pig and a monkey. From his experiments he concludes that one attack in the monkey confers an active immunity; he mentions the belief that possibly man acquires a similar immunity.

#### UNCINARIASIS.

Last year, Smith expressed the belief that infection in the human could occur through the skin of the feet. Stiles has found that dogs and rabbits can be experimentally infected with a young intestinal stage of American hook worm by merely placing the latter upon the animal's back. Eventually they find their way into the stomach and intestines. Stiles' researches confirm Smith's contention.

#### THE PANCREAS.

Herschfeld believes that the most important sign of an affection

of the pancreas in a diabetic is the disturbance in the circulation evidenced by the absence of polyuria after copious ingestion of water. He feels certain that in many cases of *diabetic coma* some acute affection of the pancreas is often the principal factor.

Cambridge presents an improved *pancreatic reaction*. By means of the improved technic the necessity for two comparative tests is eliminated. Cambridge removes the glycuronic acid by means of basic lead acetate, after which he employs the phenylhydrazin test, thereby simplifying and making the results more accurate. The details follow :

A specimen of 24-hour urine is filtered several times through the same filter paper and examined for albumin, sugar, bile, urobilin and indican. A quantitative estimation of the chlorids, phosphates, and urea is also made and the centrifugalized deposit from the urine examined microscopically for calcium oxalate crystals. If the urine is free from albumin and sugar, and of an acid reaction, 1 cc. of strong HCl (specific gravity 1.16) is mixed with 20 cc. of the clear filtrate and the mixture gently boiled on the sand bath in a small flask, having a long stemmed funnel in the neck to act as a condenser. After 10 minutes' boiling the flask is well cooled in a stream of water and the contents made up to 20 cc. with cold distilled water. The excess of acid present is neutralized by slowly adding 4 grams of lead carbonate. After standing for a few minutes to allow the completion of the reaction, the flask is again cooled in running water and the contents filtered through a well-moistened, close-grained filter paper until a perfectly clear filtrate is secured. The filtrate is then well shaken with 4 grams of powdered tribasic lead acetate and the resulting precipitate removed by filtration, an absolutely clear filtrate being obtained by repeated filtration. The large amount of lead is now removed by shaking the clear filtrate with finely powdered sodium sulphate, the mixture heated to the boiling point, then cooled in a stream of cold water to as low a temperature as possible and the white precipitate removed by careful filtration; 10 cc. of the perfectly clear transparent filtrate is made up to 18 cc. with distilled water and added to 0.8 grams of phenylhydrazin hydrochlorate, 2 grams of powdered sodium acetate and 1 cc. of 50 percent acetic acid contained in a small flask fitted with a funnel condenser. This mixture is boiled on a sand-bath for 10 minutes and then filtered hot through a filter paper moistened

with hot water into a test tube provided with a 15 cc. mark. Should the filtrate fail to reach the mark, it is made up to 15 cc. with hot distilled water.

In well marked cases of pancreatic inflammation a light-yellow, flocculent precipitate should form in a few hours, but it may be necessary to leave this preparation stand over night before a deposit occurs. Under the microscope—the precipitate should always be subjected to microscopical examination - the precipitation is seen to consist of long light-yellow, flexible hair like crystals, arranged in sheaves which, when irrigated with 33 percent sulphuric acid, melt away and disappear in 10 to 15 seconds after the acid first touches them. To exclude traces of sugar, undetected by the preliminary reduction test, a control experiment is carried out by treating 20 cc. of the urine in the same way as in the test described excepting for the addition of HCl. If the urine employed for the experiment is alkaline it is made acid with HCl; if any glucose is present it is removed by fermentation after the urine has been boiled with the acid and the excess neutralized. Cammidge has found that the administration of calcium chlorid will interfere with the reaction.

#### THE SPLEEN.

Signorvelli calls attention to the altered sensibility in morbid processes in the spleen. In case of acute tumefaction of the spleen or exacerbation of a chronic tumefaction, a zone of cutaneous hyperalgesia, he says, will be formed corresponding to the fifth interspace near the nipple. This is what he calls the "spleen point," it may be a little to one side of or above or below the nipple. In addition, there is frequently a corresponding zone at the 5th, 6th, 7th and 8th spinous processes.

#### THE KIDNEYS.

Cabot feels that the very simple test of *kidney function* which seeks to determine whether and to what extent the kidney is able to secrete and dilute urine after profuse ingestion of fluid, or a concentrated urine when liquid is withheld, has not been accorded deserved attention. In the early stage of acute renal insufficiency (such as accompany renal stasis or acute nephritis) the kidney often loses for a time the power to secrete a dilute urine; on the other hand, in some cases of chronic interstitial nephritis the kidney continues to secrete a concentrated urine even when water is withheld. Cabot agrees

that albumin and casts alone never prove the existence of nephritis. It is becoming appreciated that too much stress has, in the past, been laid on the presence of albumin and casts in the urine. The persistency of the finding and the general appearance and condition of the patient must be carefully considered.

The studies of Askanazy support Israel's contention that both colic and hematuria occurring in *chronic nephritis* are due to an acute paroxysmal congestion. Askanazy emphasizes the fact that renal colic and hematuria occur more frequently in chronic nephritis than is generally conceded.

Klinioff presents a modification of Klunge's aloin test for detecting the presence of *blood* in the *urine*. The technic follows: To the suspected urine in a test tube an equal amount of old turpentine or  $H_2O_2$  is added, and to this a small amount of aloin in powder is mixed. The mixture should then be gently heated and the presence of blood is evidenced by a bright-purple color. There is but one limitation to this test, namely, the urine must be acid, for an alkaline urine gives a positive reaction with this test whether or not there is blood in it. In order to differentiate the bloody from the blood-free urine in these conditions, simply add a little acetic acid to the purple mixture. If the urine had been alkaline, but had not contained blood, the acid will cause purple color to give way to a yellow tint; if blood was present, even though the urine was alkaline, the addition of the acetic acid does not change the purple color. The urine of jaundice gives a positive reaction independently of the presence of blood.

#### CHRONIC ACETONE POISONING.

Cohen thinks that bromoseltzer is the most common and the most dangerous cause of chronic acetone poisoning among intelligent people. Wood contends that many of the cases are a series of successive acute poisonings rather than of one chronic poisoning. In these cases the action is accumulative. Herrick argues that we should suspect the condition when a patient presents a secondary anemia, cyanosis, dyspnea, nervousness or gastrointestinal disturbances, without adequate explanation for it in the heart or other organs. Herrick agrees that the crucial test is in the examination of the urine.

#### SERUM DISEASE.

The researches of von Pirquet and Schick indicate that it is possible to avoid sensitizing a patient. In beginning serum treatment it



is necessary that a massive single dose be injected to allow the slow absorption and consequent immunity, or repeat a smaller dose several times during the 10 days constituting the critical period. By so doing many of the distressing complications and sequelæ which sometimes follow the administration of serum will be obviated. A few observers advocate the administration of calcium from 6 to 10 days after antitoxin injections; it is claimed that by so doing it is possible to prevent this affection.

#### DIPHTHERIA ANTITOXIN.

Lopez claims that early curative doses of diphtheria antitoxin administered in scarlatina will abort the disease, curtail the suffering and lessen the risk to the patient. Lopez finds that one dose of 2000 units is sufficient in the average case of sore throat due to the bacterial infection, to effect a speedy cure.

#### DIGALEN.

Freund concurs with Naunyn that digalen is to be recommended. It has no accumulative action; it is the only preparation of digitalis which can be injected into the veins. Such an injection is painless and only needs to be repeated every 24 hours; its effect is seen in from 2 to 3 minutes in a rise of blood pressure of about 24 hours' duration. Freund regards digalen as the most satisfactory preparation of digitalis.

#### INFANT FEEDING.

Walsh thinks that the cattle furnishing milk for infants should be stall fed during the entire year, since grass contains certain aperient properties which are lost in the drying. He believes that infants fed on milk from grass-fed cows get the full toxic effect of the aperient properties.

Cotton and others report good results with sodium citrate milk. The coagula of citrated milk are safer, smoother and more jelly-like or more flocculent than those of milk not thus treated. It has been found that sodium citrate in .25 percent retards coagulation. Wynn reports 69 cases of milk dyspepsia successfully treated with citrated milk. One grain of sodium citrate is added to each ounce of cows' milk diluted with an equal quantity of water. The results are commendable.

## THUMB SUCKING.

Webb overcomes the habit by taking a rubber ball, cutting one oval hole to loosely fit over the wrist, and numerous smaller holes for ventilation; then sewing a cheesecloth bag onto the oval hole and running a tape in and out of the cloth at this aperture, which can be tied to the wrist.

## TÆNIA.

Fowler advocates complete rest in bed, prolonged periods of restricted diet and administering male fern in divided doses. The patient is kept in bed for 2, 3 or 4 days on a light diet, during which time the bowels are kept freely open by means of cascara; on the fourth day at 5 a.m. *haustus sennæ comp.*, 1 ounce; at 9 a.m. a capsule containing 15 minims of the extract of male fern; at 9:15 ditto; at 9:30 ditto; at 9:45 ditto; at 11 *haustus sennæ comp.* 1 ounce. If by 1 p.m. the worm has not been passed and the head found, a second course of treatment with male fern at intervals of 15 minutes is begun; to be followed in an hour by a purgative draught.

## SYPHILIS.

Schaudinn's spirocheta is recognized as the cause of syphilis. It is Metchnikoff's opinion that even if vaccination against syphilis is eventually conclusively proven, it could only be employed under exceptional circumstances. Metchnikoff and Roux are advocating a prophylactic treatment of syphilis. They base their conclusions on the fact that inoculation of a human with syphilitic virus was not followed within three months with any of the clinical manifestations of syphilis owing to the fact that the individual was given an inunction for 8 minutes or more of calomel ointment—1 in 3, within an hour after inoculation. The constantly satisfactory results obtained in animals caused these investigators to test the technic on man. It would be interesting to know whether the same results would be obtained provided the calomel ointment be applied elsewhere than at the site of inoculation (Babler). It seems unquestionable that Schaudinn's finding will enable workers in this great field to bring forth brilliant truths during the coming year.

Potter concludes that atrophy of the papillary glands at the root of the tongue in an individual below 50 years of age is indicative of lues.

Williams comes to the conclusion that sufficient evidence has been adduced to show that gumma may be capable of transmitting the disease. He regards the experimental findings conclusive. It is not certain that gumma is always contagious; he feels that it is probable that the living, growing part, the border, is always infectious.

Semón reports a case of malignant precocious tertiary syphilis of the throat and tongue. He recommends Kober's decoction of sarsaparilla. Inunction treatment has been highly successful in his hands. Of course it must be the aim of the medical attendant to individualize when the ordinary canons show themselves insufficient to cope with the particular case and not to insist on preformed notions.

#### NEW CLINICAL ENTITY.

Brickner calls attention to a lesion of the skin appearing in the latter half of pregnancy bearing the histological character of fibroma molluscum, but differing from it clinically in its total disappearance postpartum, at a time when the other regenerative processes were being completed. The distribution was limited to the neck, breasts and submammary area.

#### LEPROSY.

Weil's agar, which he has found most suitable for the growth of the leprosy bacillus, contains, per liter of broth, 40 grams of glycerin, 8 grams of glucose, 10 grams of peptone and 20 grams of agar; to 4 parts of this medium 1 part of yolk of egg is added. The growth commences about the fifth day and continues 15 to 20 days and can not be renewed by subculture.

Hutchinson continues to advocate the fish theory as the cause of leprosy infection. Very recently, Goodhue has become convinced that the beg bug is more of a factor in the spread of leprosy among the natives than is the gnat.

Block argues that leprosy in its early stages begins as a small ulcer on some part of the mucous membrane, and that this ulcer may heal and pass entirely away. This fact, he holds, is the explanation of the maculo anesthetic cases. In nodular and mixed cases the nasal ulcer grows apace, causing extensive destruction of the nasal mucous membrane, and ultimately attacking the nasal bones. As in maculo anesthetic leprosy, the leukocytes get entangled in the peripheral nerves and cause anesthesia and discoloration of the skin, and form

accumulations in other organs and tissues. Early diagnosis and thorough curetting, and antiseptic washes will have a curative effect.

Williamson reports quite good results with the Roentgen rays. It must be admitted that the rays must by no means be considered a specific in leprosy.

#### BERIBERI.

Last year we referred to Wright's findings. Very recently Herzog, after having carefully studied the subject, concluded that beriberi was an acute, subacute or chronic disease which appeared to be due to an organism; this organism gained entrance either directly or through the food, and produced a toxin which in character and effect resembled the diphtheria or the tetanus toxin. The action is considered accumulative.

#### CHOREA.

Poynton and Holmes come to the conclusion that chorea is a manifestation of acute rheumatism and that the diplococcus rheumaticus is the infective agent in rheumatism. Duckworth regards chorea as a neurohumeral disorder. He contends that the predisposing factor which determines an attack of chorea in a rheumatic subject is the neurotic element. Chorea is considered to be cerebral rheumatism.

Langevin advocates absolute rest in bed, a strict meat diet, hydrotherapy and gradually increasing doses of antipyrin. The administration of antipyrin must be carefully watched, and its use should be superseded in the event of albuminuria, weakness of the pulse or other toxic manifestation.

Thayer found that of 689 cases of chorea observed during one or more attacks, 25.4 percent showed evidences of cardiac involvement. In many of the cases fever was present. Thayer concludes that there is good reason to believe that the presence of fever in otherwise uncomplicated chorea is, in a large percentage of the cases, associated with a complicating endocarditis.

#### RABIES.

Babes accepts as the actual parasite certain fine granules—round, black or blue (with the Cajal-Giemsen stain), found exclusively in the protoplasm of the degenerated nerve cells in the most severely affected parts of the nervous system. Babes looks upon Negri's bodies as representing encapsulated forms of the parasite, in a phase of involu-

tion or transformation. It must be admitted that Negri's bodies are generally conceded by investigators to be the cause of rabies (Babler).

#### RADIUM.

Birch-Hirschfeld contends that we must accept a direct action on epithelial cells; the cell chromatin suffers directly but does not lead to death of the cell. The growth is retarded and deformity of the cell follows. Hirschfeld distinguishes an inflammatory-producing and a degeneration producing action of radioactive substances; he contends that London's assertion that radium caused a light reflex in the absolutely blind is erroneous.

Balthazard compares the radiations of radium to those of a very soft Roentgen tube. He feels that the therapeutic action of radium is limited to very superficial lesions as well as to those inaccessible to the Roentgen rays.

Precht mentions the observation that when radium remains in a closed tube for several months it is likely to cause an explosion, possibly due to the accumulation of the liberated helium.

Abbe considers radium the most desirable treatment of inoperable structures of the esophagus and rectum; in these conditions it gives more comfort to the patient than can be obtained by colostomy or gastrostomy. Schmidt has observed telangiectasia at the edges of the cicatricial atrophic skin after radium, as after Roentgen exposures.

Tizzoni and Bongiovanni find that the effect of radium differs in vitro from that obtained in vivo. In vitro the radium produces a chemical decomposition of the virus of rabies, in virtue of the emanations given off by the radium; in vivo the effect is a biological one. Tizzoni found that the virus of rabies is markedly affected by radium, both in vitro and in vivo, and is rendered either totally or partially ineffective. It must be remembered, however, that Calabrese has repeated the experiments performed by Tizzoni, but was unable to even partially corroborate his contentions.

#### ROENTGEN RAYS.

Schwartz's new method of measuring the strength of the rays is based on the precipitation of calomel, as a chemical reaction to the rays, from a mixture of ammonium oxalate and bichlorid of mercury.

The researches of Försterling indicate that the younger the animal exposed to the rays the more marked the inhibitory action on the

growth. He feels that the finding suggests extreme caution in the use of the rays in young children.

We are becoming more appreciative of the fact that the Roentgen ray is by no means a panacea. We are also becoming cognizant that death may follow continued exposures, hence workers in this field are employing various means of protection. Experience corroborates the contentions that in operable cases of malignant disease it is far better to excise the growth, and then expose the area to the rays, instead of excising, if necessary, after the exposures have been made.

Harland and Pancoast think that the secret of success in obtaining a good picture in cases of frontal sinusitis, lies in the use of a hard tube and a diaphragm, with plenty of current and a short exposure. For lateral views the plate is held on the diseased side, the tube being distant 18 inches. They usually expose 28 to 52 seconds, and use from 32 to 48 amperes of current.

Phaler has treated 6 patients with carcinoma of the mediastinum, secondary to mammary cancer, and comes to the conclusion that sufficiently good results have been obtained to justify the recommendation of the rays early to such patients.

#### TETANUS.

The consensus of opinion, based on wide experience, agrees that the prophylactic treatment of tetanus is the present day ideal treatment. What we said in our review last year, holds true today. It is far safer to administer a prophylactic injection in cases in which there is the *slightest* suspicion than to sacrifice a human life to the disease.

Zupnik contends that tetanus toxin has no specific action on the brain substance. He feels that his experiments indicate that all injections of antitoxin into the nerves, spinal cord, subarachnoid or cerebrum are without justification.

#### CULTURAL DISTINCTION.

Pepere distinguishes bacillus coli from bacillus typhosus by means of a solid medium of liver bouillon to which he adds 3 to 4 percent of sodium nucleinate A, prepared from the thymus gland according to E. Neumann's direction. The bacilli coli cause rapid liquefaction at 37°C. The bacilli typhosus do not cause liquefaction.



## ISOLATION OF PNEUMOCOCCUS.

Ruediger simplifies the isolation by employing a sugar-free agar, with the addition of inulin and litmus. His medium consists of : Peptone (Witte) 10, agar-agar 15, and sugar-free beef broth (neutral) 1000.

## PAPILLOMA OF THE LARYNX.

Bonner advocates the employment of a formalin spray, 1 in 100, following operation for papillomata of the larynx. He has had excellent results from the treatment, and he is inclined to believe that formalin prevents recurrence of the growth.

## CONGENITAL LARYNGEAL STRIDOR.

Turner concludes that there appears to be sufficient evidence in favor of the view that an acquired deformity of the upper laryngeal aperture is probably the cause of this condition. Ashby inclines to the neurotic theory; from his experience he feels that the cases observed by him were of neurotic origin.

## PERTUSSIS.

Dr. E. W. Saunders reports the first instance, in so far as I can find, in which intubation was resorted to in the treatment of pertussis. It is quite true that the technic has been previously advocated, but in looking over the recent literature, no recorded instance of its use has been found. The results in Saunder's case were quite flattering.

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**Surgery.**

## BLOOD COUNT.

The true surgical value of the differential leukocyte count has been carefully estimated by Gibson, who concludes that the differential blood count and its relation to the total leukocytosis constitutes the most valuable diagnostic and prognostic aid furnished by any of the methods of blood examination. Gibson contends that its chief value consists in indicating the existence of suppuration or gangrene, the increase in the number of polynuclear cells under such circumstances being disproportionately great as compared to the leukocytosis. The normal number of leukocytes is estimated at between 5,000 and 10,000 and the normal proportion of polynuclears at 75 percent. Especial significance is attached to a disproportional increase in the

number of polynuclear cells. The latter signifies a severe lesion or that absorption is active—possibly both.

#### ANESTHETICS.

Sir Victor Horsley employs chloroform in all brain surgery. He has found that it lowers the blood pressure, diminishes the blood viscosity and by its paralyzing action on the nerve trunks it causes practically no after excitement. By means of the Harcourt regulator it is possible to accurately regulate the amount of chloroform vapor inhaled. Horsley holds that ether raises the blood pressure and increases the blood viscosity and, therefore, much additional and troublesome hemorrhage.

The Mayos continue to employ ether anesthesia preceded by a single hypodermatic injection of morphin. The ether is administered on an Esmark inhaler. Their results by this method have been very gratifying.

Here and there we find reports of stovain, cocain, etc., but it must be admitted that the spinal method has not, as a rule, gained many adherents. Kravhoffs regards Meltzer's magnesium sulphate anesthesia quite inferior to stovain or cocain. In fact, he has not been favorably impressed with it. He is of the opinion that the paralysis and anesthesia induced are due to anemia of the nerve trunks.

#### OPERATIVE COMPLICATIONS.

Armstrong has stated that *lung complications* were most frequent after cerebral operations, usually due to aspiration. He advocates antiseptic mouth washes and the giving of sterilized water for drinking purposes for 24 hours before operation. Every precaution must be observed during and after anesthesia.

Last year mention was made of the application of cardiac massage in the treatment of *sudden stoppage* of the *heart* beat during anesthesia. Lenormant has come to the conclusion that the procedure is justifiable and occasionally successful. The chief obstacle to the renewal of the normal beat of the heart is tremulous fibrillar contraction of the heart muscle. When the tremulous movement is present there is very little hope of restoring the circulation and the cardiac function by massage alone. Direct electrization of the heart is held to be dangerous and is condemned. Arterial injection of serum has given good results in animals.



Sir Victor Horsley prevents *shock* by proper technic. He prevents undue cooling, regulates the inhalation of chloroform vapor and, in operations upon the brain, he constantly irrigates the operative field with 1/10,000 sublimate or saline. Hemorrhage is prevented as much as possible. Strychnin is administered when the respiratory center appears depressed. For controlling the depressed circulation repeated enemata (every 2 hours) of 4 ounces of beef tea in which is dissolved Brandt's essence or pancreatized milk, are given. If time presses, a very small dose of atropin is useful, and in case of peripheral vasomotor paralysis, digitalis is also of value, but its use must be at once stopped if there is any acceleration of the pulse. Horsley has observed that in children especially the body temperature rises after operations; and that it may be necessary to resort to cold sponging. In Horsley's opinion the main principle of operations on the central nervous system should be the avoidance of all conditions which lead to shock—namely, cooling and mechanical disturbances of the central nervous system.

Keen has practically substituted adrenalin for strychnin in the treatment of shock. Montgomery favors aseptic ergot after administering a preliminary dose of strychnin. Next to intravenous saline injection Montgomery relies on ergot as the most effective agent in shock.

Rodman concludes that in mild cases due to anesthesia and operation combined, nothing more is necessary than oxygen, decided lowering of the head and artificial heat. In moderately severe cases unaccompanied with great cardiac and respiratory involvement, enemata of hot coffee and whisky, or enteroclysis of hot saline solution, in addition to heat and posture, will be all that is necessary. In cases with cold clammy skin and pain it will be necessary to administer morphin and atropin in conjunction with the above.

The findings of Crile and Dolley concerning the treatment of grave cases of *hemorrhage* are worthy of painstaking consideration. They found that an effective method in these cases must supply more isotonic blood. Bearing in mind the fact that biochemic researches of recent years had demonstrated that the blood of an individual of one species could not with safety be introduced into an individual of another species, and calling to memory the recent work of Carrol, Crile and Dolley employed the former's technic of end to end anasto-

mosis, thereby transfusing by the direct method. The experiments were so successful and gratifying that Crile determined to apply the principle in man. Recently, he has reported 6 cases of alarming hemorrhage thus treated by direct transfusion. The proximal artery of one individual—the donor, was united by end to end anastomosis with either an artery or vein of the bled individual—the donee. The results were marvelous. Crile says:

“The transformation in these cases has been unequalled in my surgical experience, except in the relief from asphyxia by intubation.”

The dangers of direct transfusion are, however, quite apparent. It must be admitted, however, that Crile has brought forward a very important finding.

Charrin and Jardry consider the *aseptic fever* following operations to be of chemical origin. The effect is of brief duration. The tongue, as a rule, remains moist, the urine is abundant and the facial expression is good.

Johnson contends that *thrombosis* and *embolism* occur most frequently after supravaginal hysterectomy for myomata. Reynolds regards varicosity of the veins of the broad ligaments as an important predisposing cause. Dührssen and others agree that sepsis is not a cause of the condition. Norris refers to 3 cases in which he believed thrombosis was due to the violence with which Credé's method of expressing the placenta had been employed. Norris is of the opinion that an infectious condition of the blood previous to operation prepares the way for the complication in question.

#### RECTAL FEEDING.

Boyd has made extensive studies and concludes that rectal feeding is subnutrition of the most pronounced character. He contends that the surgeon should understand that it is hopeless to expect that a patient who is suffering from esophageal or pyloric obstruction can be brought into a state of improved nutrition by its means. Owing to the very small amount of albumin absorbed from the rectum it is desirable to abandon much of the nitrogenous material at present used for this purpose. The best form of fat is the yolk of egg; it prepared fat is used it should be a fine emulsion of fat of low melting point; pure olive oil may be used. Boyd suggests that a good nutrient enema consists of the yolk of 2 eggs, 30 grams of pure dextrose, 0.5 gram of common salt, and pancreatized milk. The enema should not

be given with a syringe, but slowly syphoned into the bowel by means of a soft rubber catheter and a small-sized filter funnel.

#### BLOOD VESSELS.

Not very many years have elapsed since puncture of a large artery was considered of very grave import. The recent experiments of Carrel and Guthrie have fully convinced the most skeptical that blood vessels can be successfully anastomosed. Carrel and Guthrie obtained the reversal of the circulation in the jugular vein, in the carotid artery, as well as in the veins and arteries of a limb. The thigh of a dog was completely amputated and afterward replanted by suturing the vessels, the nerves, the bones, the muscles, the aponeuroses and the skin. These investigators have clearly established a surgery of the blood vessels.

More recently Carrel and Guthrie have attempted to develop a method of anastomosing blood vessels so that even in case of slightly imperfect technic resulting in deposition of fibrin on the lines of suture, the circulation would not be disturbed. They found that by the patching method, which consists of closing an opening in the wall of a vessel by fitting and sewing to its edges a flap taken from another vessel or from some other structure, such as the peritoneum, the termino-lateral anastomosis of blood vessels is more safely performed than by other methods. It prevents the occurrence of gangrene after the transplantation of organs even in case of slight infection. The transplantation of a kidney by this technic was successfully performed 4 months ago; the circulation is, at present, excellent.

Brougham reports a case of successful arterial anastomosis by invagination. Goyanner successfully substituted the popliteal vein for the artery in a case of popliteal aneurism.

The possibilities of Carrel and Guthrie's findings are patent to the most casual reader. The workers deserve great credit for their valuable work.

#### BRAIN.

The true functions of the *prefrontal lobes* of the brain have long been questionable. The fact that pathologic changes may occur in these areas without causing diagnostic symptoms has long been acknowledged. Phelps has recently concluded that—1, mental decadence always attends conjoint lesion of both prefrontal regions; 2, mental

decadence always attends lesion of the left prefrontal region alone; 3, mental decadence never attends lesion of the right prefrontal region alone.

Unilateral disturbances in the *frontal lobe* does not, according to Anton, cause any special mental symptoms, but bilateral disturbances, with involvement of the corpus callosum, induces a syndrome not unlike that of progressive paralysis.

Sir Victor Horsley has added a mine of information to our knowledge of *surgery of the brain*. He urges early operation in surgical lesions of the central nervous system. In cases suggestive of the existence of gross organic disease of the brain surgical treatment should not be regarded as a last resort, but ought to be adopted promptly so soon as it has been found that a probationary period of 2 or 3 months' medical treatment has not been productive of any beneficial result. As is known, intracranial disease is liable to produce optic neuritis, with resulting total blindness, and it may concomitantly cause severe headache and vomiting. These pressure symptoms are often very prominent. Horsley has found that optic neuritis begins on the side of the lesion. It is Horsley's firm conviction that in no case of optic neuritis, which is not of toxemic or anemic origin, should the process be allowed to continue after it has once been diagnosed. Operation must be performed before secondary changes of a prominent character have developed in the disc.

Horsley has observed that special motor function of the brain can not be restored if the whole of their cortical representation be removed; the same is true of the hemianopic representation of sight, and probably of all the other special senses. But the higher sensory representation and the intellectual function are, on the contrary, not permanently abrogated by the destruction of any one part of the cerebral hemisphere. The cerebellum also possesses a remarkable power of recovering after severe surgical treatment. Concerning the surgical treatment of malignant disease of the encephalon, Horsley says:

"Operation should be resorted to as early as possible. The tumor should be, if possible, freely exposed and examined and extirpated with the surrounding tissue. If it can not be removed without undue interference with important or essential structures there remains some possibility of the tumor undergoing retrogression in a certain number of cases."

Horsley urges the careful and accurate regulation of the chloroform vapor; the carotid must not be ligated; capillary oozing must be combatted with constant irrigation of hot saline solution; the venous pressure may be lowered by means of inhalation of oxygen; oxygen inhalation also removes the asphyxia; shock is prevented by proper technic. Horsley condemns the mallet and chisel; he opens the cranium by means of the trephine, saws and rongeurs. He has found that the cerebral hemispheres can be displaced by means of a broad spatula; the pressure must be applied gradually and not too forcibly. Bleeding from veins and sinuses in bone can be arrested by wax plugging. Hemorrhage may be prevented by ligating the branches of the vessels as far as possible from the trunk; tie all arteries around the lesion before excising it. Horsley believes that the risk of an operation for decompression of the brain is greater if the opening for the relief of pressure is not made directly over the lesion. Correct diagnosis has much to do with prognosis.

Spiller and Frazier hold that the decompression operation offers to the patient relief from headache, nausea and vomiting, and restores vision; if the lesion is in the cerebellar fossa, the operation relieves vertigo and ataxia.

#### EYE.

Thomas advocates the following operation in the treatment of *ptosis*: A skin incision is made along the upper border of the tarsal cartilage, extending from one end of the latter to the other; the skin is then completely separated from the underlying orbicularis as low as the ciliary margin and as high as the orbital arch; two vertical incisions are then made through the orbicularis, one on either side of the tendon of the levator, down to the tarsal cartilage below and as deep as the conjunctiva above it; the portion of the orbicularis between these incisions, together with the tendon of the levator, is separated from the conjunctiva as far back as possible; when the dissection is carried upward about  $\frac{3}{4}$  of an inch, the cellular space between the orbicularis and the levator is readily found and the muscles separated; the redundant portion of the orbicularis is now excised; a forceps grasps the tendon of the levator and its attachment to the cartilage is cut. As much of the muscle as is deemed necessary is excised. Three mattress sutures are then employed to join the tendon to the cartilage. It is very essential that the center stitch is placed properly, and that



the lateral sutures are equally distant from it. Silk is preferable for suturing. Before bringing the cutaneous margins together Thomson excises a narrow strip of skin, thereby obviating the fullness usually noted about the lid after ptosis operations.

Primrose describes a new operation for *pannus*. It consists in causing an extravasation of blood into the subconjunctival tissue around the cornea. This, by its mechanical pressure and by acting as an irritant foreign body setting up a localized inflammation, causes obliteration of the vessels which vascularize the cornea.

The fact that a *foreign body* may remain in the eye for a number of years is worthy of note. Felanders has reported an instance in which a piece of steel, resting upon the ciliary body, was retained in the eye for 7 years. The patient sought treatment on account of the excruciating pain. Vision had been practically lost. Enucleation was necessary.

#### Nose.

Uththoff reports 2 cases of *injury of the eye* following paraffin injections for *saddle-nose*. He advises waiting a sufficiently long time before repeating the injections, to arrest the circulation in the adjacent blood vessels during the injection, and to use paraffin with a high melting point.

Greenfield Sluder presents an operation for *straightening the nasal septum*. The technic is based on the fact that a capital difficulty in getting satisfactory results in these cases of deflection is due to the springiness of the tissues, usually of the cartilage. Sluder makes three incisions—one along each of the areas of greatest spring or resiliency, through the entire thickness of the septum and extending the full length of the deformity, or a little more if possible. Two strips are thus cut entirely free except as they remain attached anteriorly and posteriorly. These strips are now freely movable and permit of ready adjustment. A cotton or gauze plug, or Asch's hollow perforated plug may be employed to keep the septum in the corrected position. In the 24 cases reported by Sluder the results were quite flattering.

Mosher employs the direct method of correcting lateral *deformity of the nasal bones*. He makes an incision  $1/8$  inch in length over the lower outer angle of the nasal bone; a chisel of a similar size is placed in the incision and driven through the bone with a mallet; the chisel is then driven through the outer border of the nasal bone until the top

of the nasal bone is reached, when the chisel is turned horizontally so that it is parallel with the teeth and at right angles with the incision through the outer border of the nasal bone. The entire procedure is then carried out on the other nasal bone. The bones having thus been properly and completely freed they are forced into the median line. The operator may find it necessary to chip off a portion of the ascending process of the superior maxilla on the side toward which the bones originally deviated.

Denker has devised a new technic in the excision of *malignant tumors* of the nose. He enters the antrum of Highmore through an incision above the gums with resection of the facial wall after the soft parts have been retracted; removes the lateral wall with chisel and forceps, and through an opening thus formed removes the tumor. The value of the advanced technic is obvious.

#### LIP.

Serafinis finds that in *cancer* of the lip the glands become involved in 2 or 3 months. His 100 cases clearly demonstrated this very important fact. Eisendrath says: "There is no form of carcinoma in which involvement of the lymph nodes draining the area involved takes place as early as in carcinoma of the tongue, lips, etc. It is for this reason that operations for the radical removal of all infected territory seems to offer such favorable opportunities for permanent cure." Serafinis' experience has been that recurrence is generally observed within 6 months; radical resection of the tumor and glands (at the primary operation) is followed by complete cure in 73 percent of the cases of lip cancer; even in cases of repeated recurrence, the result may finally be a complete cure.

#### TONGUE.

Butler's studies and experiences convince him that so called "*pre-cancerous*" lesions of the tongue are in reality actual malignant growths. Hutchinson concurs that the radical operation should include both the submaxillary regions whenever the primary epithelioma is at or near the middle line of the lip. If the growth is placed close to one angle of the mouth the neck operation may be safely limited to that side including the submental glands and those over the upper end of the carotid artery and jugular vein.



## NECK.

Crile concludes that every case of *cancer* of the neck is at some time curable by complete excision; that the field of regional metastases is exceptionally accessible; that cancer really penetrates the extraordinary lymphatic collar of the neck; that the growth tends to remain here localized; that by applying the same comprehensive block dissection as in the radical cure of breast cancer and by freely utilizing the modern researches of surgery the final outcome in cases of cancer of the neck and head should yield better results than that of almost any other portion of the body. It is not necessary to permanently close the common carotid. Superficial epitheliomata in aged subjects, appearing on various parts of the skin of the face, rarely metastasize. When the lymphatic glands of the neck are involved, the key to the situation is the complete excision of the internal jugular vein. Both the internal and external jugulars of one side may be tied and excised without causing any untoward circulatory disturbance.

Crile emphasizes the fact that the operative field should be subjected to the very minimum of trauma, hence an ample incision is a requisite; as are sharp dissection, minimum retraction, minimum sponging, and a clear field. Half an hour before operation a hypodermatic injection of atropin, 1/100 grain, and morphin, 1/4 grain, is administered.

## THYROID GLAND

Kocher has completed his three thousandth operation for *goiter*. He has never observed a severe case of exophthalmic goiter without an alteration of the thyroid gland; he would not accept the diagnosis of exophthalmic goiter in the absence of characteristic swelling of the gland and the tachycardia at the beginning. One of the earliest symptoms in many cases is a sudden retraction of the upper lid when the patient is made to look steadily at you or to look upward suddenly. Kocher emphasizes his finding that the success of operative treatment depends quite materially upon the degree in which the disease presents itself at the time of our examination. The three classifications observed by Kocher are.—1, Vascular goiter (*struma vascula*); 2, *struma gravesiana colloides*; 3, typical Basedow or Graves' disease. In the first variety there is present a very characteristic change in the thyroid gland with great dilatation of the vessels, and a systolic bruit and thrill; tachycardia is always present; tremor, as a rule, but oph-

thalmus is often wanting. In the second class the characteristic feature is that an ordinary goiter exists before the development of the Basedow changes which are, so to speak, grafted on colloid goiters. This was quite a frequent form. The symptoms are less severe even when all are present. The exophthalmus especially may be wanting. Of 72 cases of the second form Kocher has recently operated upon 60 without a death. He has operated on 106 cases of typical Basedow's disease with 9 deaths. Kocher scouts the idea that in goiter we have to do with a neurosis. He feels that overactivity of the gland would be quite sufficient to explain the appearance of symptoms of Graves' disease and their disappearance after operation. Kocher admits that in many cases the first change is in the nervous system; in others the disease dates from an acute infection; prolonged or sudden nervous exhaustion is frequently responsible for the onset; it is also possible that a suddenly increased metabolism in the nervous tissue brings toxic substances through the circulation to the thyroid gland, and give rise to increased activity of the parenchyma. In Kocher's 1000 cases of ordinary goiter (excluding malignant disease) he has only lost 3 patients. Kocher contends that operation in the early stages of Basedow's disease does not expose the life of the patient to any danger. He always precedes operation by judicious medical treatment for weeks before operation. The judicious use of iodine for a short time, the continuous use of from 2 to 10 grams daily of sodium phosphate, and absolute mental and body rest.

MacCallum concludes that insufficiency of the parathyroid glands play no part in the etiology of the disease. Osler advises an earlier medical treatment; he feels that the patient should be subjected to rigid, thorough, systematic treatment of not less than 3 months' duration, in bed at rest, in the open, an ice bag on the chest, "and drugs—according to your taste." Osler agrees that the surgical results are often marvelous.

Kocher, after reviewing his 3000 cases, lays special stress on the fact that operation is harmless if the heart is sound. Heart functioning must be carefully tested. Even the mere lowering of the blood pressure from the standard—150 mm.—to 130 mm. renders an operation of this kind somewhat hazardous.

In passing, it may be added that the serum advocated by Beebe and Rogers has yielded quite good results. A very good serum can

be prepared from the normal thyroid glands. The gray rabbits make the best serum. It is the consensus of opinion that the serum is worthy of trial before operation is performed.

A word about anesthesia: Recently Ochsner stated that very little additional anesthetic would be found necessary provided the head and shoulders be elevated after the patient has been anesthetized. The cerebral anemia following the elevation of the trunk usually suffices.

#### BREAST.

Practitioners are becoming appreciative of the fact that 80 per cent of the tumors growing in the mamma are malignant. Experience continues to corroborate the contention that early, proper excision will bring cure. Even in late cases of cancer of the breast operation prolongs life and alleviates the suffering. We know that "recurrence" means simply our failure to completely excise all of the diseased tissues—nothing more.

Wier finds it possible to explore the supraclavicular space by passing the little finger or the forefinger under or beyond the clavicle to one of the sides of the vessels while the arm is pulled vertically upward. Infected glands not palpable through the skin can thereby be detected without extending the incision. If no glands are enlarged, a small cigarette drain is introduced into the hole made by the exploring finger.

Murphy obviates the evil results of axillary excavation by using a portion of the pectoralis major, or of any one of the muscles which extend from the chest and are attached to the upper end of the humerus. Murphy favors the lower part of the pectoralis major, devoid of its aponeurosis. When the skin wound is closed the arm is dressed at right angles to the body by means of an axillary cast. Many prominent surgeons have, however, found such a procedure unnecessary.

Jackson presents a new technic for breast amputation. The skin incision begins at a point about one and a half inches below the middle of the clavicle, in the sulcus marking the interval between the deltoid and pectoralis major, and extends in a straight line along the sulcus, parallel to the inner border of the deltoid, until it reaches the lower border of the pectoral fold as it terminates in the arm; the incision is later carried along the under margin of the pectoral fold to the chest, at a point which, as a rule, corresponds with the lower border of the mamma itself. The remaining portion of the incision

is made in the form of an ellipse about the nipple, with its long axis nearly obliquely from above downward and outward to the outer quadrant of the breast. The ellipse is so planned as practically to make its outer course parallel with the line of the first incision made, and thus to present, when completed, a quadrilateral flap with its base upward and entirely free below. The advantages of the technic are, according to Jackson, the following: 1, The ligation of all vessels at their nearest point of origin, thereby minimizing hemorrhage and loss of time; 2, the flap obviates the necessity of grafting; 3, axillary fossa is obliterated, thereby preventing formation of scar tissue and the resulting complications; 4, the entire technical portion of the operation is completed before the chest is exposed by removal of the breast, thereby preventing exposure to infection and attendant shock. In certain instances the technic advocated is not applicable; in suitable cases it has been found of very great benefit (Babler).

Beck advocates a new line of incision for excision of the breast. The incision is in the form of a rectangle around the breast. The interior line of the rectangle is continued on both ends to the extent of about 3 inches. The same is done with the lower end of the external side, while the upper exterior end is extended along the outer margin of the pectoralis major muscle up to its humeral insertion. The axilla itself is not touched. After the rectangle, including the whole breast, is excised the upper skin flap is formed and reflected. Thus the area of operation is fully exposed. The pectoralis muscles and their fasciæ may be excised if desired. By gently drawing the reflected lower flap upward and the upper flap downward it is possible to ascertain the presence of tension; if there is any tension, the lower flap is made longer by extending the incision lines on both sides.

#### CHEST.

In 1897 Rehn reported the first case of successful suturing of a wounded *heart*. More than 80 cases of penetrating wounds of the heart have been operated, with 40 percent recoveries. Mornbury concludes that operation should be undertaken in every case of percutaneous wound of the heart not immediately fatal. There is practically no pathognomonic symptoms. Hemorrhage from the external wound may be absent; forcible bleeding pulsations, and a bright red color of the streaming blood, all favor the diagnosis of heart wound. Disturbances of the heart's action and of the normal character of the

pulse occur in almost every case of heart wound (Mornbury). Wolff contends that in case of penetrating wound within the cardiac region, in which there is severe and persisting shock, a feeling of deep distress and alarm, and extreme dyspnea, it may be concluded that a penetrating wound of the heart is present.

Tiegel finds that it is possible to suture a penetrating wound of the *lung* so effectually that hemorrhage and leaking of air may be prevented. He accomplishes this by running a skewer, made of magnesium, into the tissues, on each side of the wound, and suturing the lips of the wound together with fine silk dipped into a solution of iron chlorid. The running suture is preferable. Magnesium is absorbable. The iron chlorid promotes coagulation.

Ransohoff, in discussing the treatment of chronic *empyema*, presents a new procedure, consisting in "gridironing" the pulmonary pleura with many parallel incisions removed from each other about a quarter of an inch, and of crossing these obliquely or at right angles by other parallel cuts. An incision is also cautiously carried through the length of the groove or angle of reflection of the costal and pulmonary layers of the pleura. If the latter incision is limited to the costal portion of the gutter, and carried toward the chest, there is no danger of wounding any large vessels or of opening the sound pleura above. It is to be remembered that an early recognition of *empyema* and the prompt and proper evacuation of such pus sac will render these extensive and severe operative procedures quite unnecessary. Patients suffering from chronic *empyema* are by no means suitable subjects for prolonged surgical procedures (Babler).

#### ABDOMEN.

Morrison is of the opinion that the *omentum* travels about in the abdomen with considerable rapidity, and is attracted by some sort of information to neighborhoods in which mischief is brewing. The movements are due to more than a mechanical cause. When the omentum becomes attached to uterine fibroids, the latter may attain enormous dimensions.

Murphy reports 36 cases of acute general *suppurative peritonitis* with but 1 death. Murphy's technic is well known. The pressure is relieved and free drainage is instituted. This, combined with the sitting posture, little or no food, and saline solution per rectum produce wonderful results. Brown reports 14 similar cases with 1 death. Other



surgeons have had similar flattering results with Murphy's technic. In discussing the treatment of acute septic peritonitis, Bond states that in cases of moderate severity the safest course is dry sponging or local irrigation and drainage of the primary focus; highly virulent streptococcal infection may require free irrigation. Hotchkiss contends that the peritoneal drain can be eliminated as a factor of importance in the treatment of diffuse suppurative peritonitis following appendicitis. He searches systematically for the appendix and excises it with as little trauma as possible; the appendical site is then cleansed, the pelvis and the lower abdomen are rapidly irrigated with the return flow canula or Blake tube; the saline solution need not be removed before closing the abdomen. Gastric lavage is given before the patient leaves the table; as a rule, an ounce or two of saturated solution of Epsom salts were introduced through the tube; the use of morphin is not resorted to; saline solution per rectum every 6 hours is advocated. Hotchkiss condemns gauze packing. The brilliant results attained by the Murphy technic seem to merit a continuance of same until Hotchkiss' contentions are verified (Babler).

Finney has presented an excellent monograph on *postoperative ileus*. He agrees that adhesions are the chief factor to be reckoned with in the attempt to prevent the occurrence of postoperative ileus. The article must be read to be fully appreciated. Baisch firmly believes that the presence of blood is the principal factor in the production of adhesions, and hence of postoperative ileus. He holds that the only means of preventing adhesions and of breaking up those forming, are to place the intestines in a normal position, to stimulate peristalsis early, to refrain from cleaning out the intestines too thoroughly before operation and to banish opium from the preliminary and after-treatment.

The year's work in *stomach* surgery has but corroborated the contention that the only treatment applicable to *gastric cancer* is early excision, nay, more than this—it has clearly demonstrated that in every suspicious case it is the physician's duty to request exploratory operation. Some practitioners may, and in fact do, argue that this is going too far, but when the fact is recalled that, at present, we have absolutely no other means by which an early, accurate diagnosis is possible, and since the mortality of exploratory incision should be practically nil, and since early diagnosis and early, complete excision are prime

requisites for a successful issue, the plea for early exploration is based on sound facts.

Pinatelli and Cavillon report 2 cases of gastric cancer with secondary deposits in the cranial bones and meninges. Mayo correctly asserts that cancer of stomach never has been cured by medical means. The Mayos have resected the stomach 100 times with a mortality of 14 percent. During the past two years they have performed resection in 63 cases with a mortality of 9.5 percent. Nine of these 63 patients lived less than 6 months; 40 lived from 6 to 12 months; 12 lived from 2 to 3 years; 1 lived 5 years.

Mayo emphasizes the fact that exploratory incision is the only way an early diagnosis can be established. The presence of a tumor is not a contraindication to operation. The presence of carcinomatous glands in the supraclavicular fossa is a contraindication to operation. Fixity of the growth and the presence of ascitic accumulations are also contraindications. Mayo urges the value of radical operation in suitable cases. Twenty five percent of recoveries lived more than 3 years.

It is especially worthy of mention that practitioners are becoming more appreciative of the fact that *gastric ulcer* may pave the way for a gastric cancer. Mayo states that 56.4 percent of his cases showed direct evidence of cancer developing on ulcer. Brewer contends that 60 percent of all cases of gastric ulcer treated medically must look forward to death or chronic invalidism. He advocates operation in all cases of indurated chronic ulcer and in all cases of recurrent symptoms after primary cure. The Mayos have operated upon 600 cases of gastric and duodenal ulcer. They find that the saddle ulcer of the lesser curvature above the pylorus is the most common form. In their opinion 85 percent of stomach ulcers are indurated, and a very large majority involve all of the gastric coats. By means of the posterior no loop gastrojejunostomy they lost but 1 in 135 operations. The Mayos prefer the gastroduodenostomy of Finney in cases in which the obstruction is due to spasm or other non-mechanical cause. Calloused ulcers of the stomach or duodenum, if of large size and with thick, hard margins, whether hour glass or not, are best treated by some form of gastric resection, since they are frequently followed by carcinomatous degeneration. In the Mayos' cases, 90 percent of patients suffering from gastric and duodenal ulcer who have been subjected to



operation have been cured. What does the future offer the unknown 10 percent? (Babler). Friedenwald favors operation if the occult hemorrhage does not disappear from the stools under appropriate treatment.

Tyson agrees that cases of gastric ulcer with dangerous hemorrhage forms one of the most justifiable instances for operation. It is Paterson's conclusion that in hemorrhage from chronic gastric ulcer, operation should be performed after one severe attack or after several slighter attacks if the loss of blood is causing severe hemorrhage. Mayo has found gastrojejunostomy for acute hemorrhage a reliable procedure. The best treatment is, in his opinion, primary operation on the bleeding point with or without excision of the ulcer.

Tavel presents a new method of *gastrostomy*. He finds that the operations advocated by Witzel, Koder and others are open to the constant tendency which they show to closure and, moreover, they necessitate the administration of liquids only. Tavel's technic does not anchor the stomach to the abdominal wall, hence the movements of the stomach are not restricted. Tavel advocates the interposing between the gastric and external openings, of an excluded or resected portion of small intestine, still connected with its corresponding portion of mesentery, the divided ends of the intestinal canal being united by end-to-end anastomosis. Tavel has experimented on dogs and found the technic satisfactory. He has recently operated upon a young man for the relief of impermeable esophageal strictures; 15 cm. of the small intestine just beyond the jejunum was resected and, after the intestinal continuity of the rest of the intestinal tract had been re established, was passed through the openings made in the omentum and mesocolon, and fixed by its anal end to the margins made in the anterior wall of the stomach, and by its gastric end to the external wound. The results were quite flattering; there was no regurgitation through the newly-made channel.

Eve has performed the following operation with good results in 3 cases of *gastroptosis*: With the patient in the same position as in operation for gallbladder disease, the stomach was exposed and 5 silk sutures were passed through the lesser curvature of the stomach, ranging from the pylorus to the cardiac orifice, and above they were carried through the attachment of the lesser omentum to the liver, and forward, somewhat deeply, through the liver substance itself, in order to

obtain a better hold. When the sutures were tied the lesser curvature was effectually raised and the greater curvature was roughly 2 inches above the umbilicus. The tendency toward downward displacement of the liver was remedied by a series of interrupted sutures carried through the anterior surface of the left lobe of the liver and then through the margins of the costal cartilage. The future must determine the true value of Eve's technic.

The great superiority of posterior *no loop gastroenterostomy* over the anterior variety has gained recognition at almost every hand. Paterson, however, clings to the old technic. Experienced and the most practical surgeons favor the no loop technic.

Powell has suggested a modified technic for *lateral enteroenterostomy*; the operation is also applicable for performing lateral anastomosis of any of the abdominal viscera where immediate anastomosis is not imperative. Powell's technic differs from the standard only in that he employs the thermocautery, heated to a dull heat, to produce necrosis of the apposed surfaces, instead of the knife. The entire thickness of the intestinal walls is devitalized but not perforated. Pleth facilitates the operation by means of two ordinary knitting needles. He first unites the serous surfaces of the apposed guts with a running linen suture for a distance of 7 to 10 cm. This he terms the posterior suture; he then passes one of the knitting needles through the gut wall about 1 cm. from the posterior suture, causing it to traverse the lumen of the gut for a distance less than the length of the posterior suture, emerging again on the serous surface. The two needles are brought together, laid parallel, and a straight needle armed with strong silk passes back and forth through the opposite gut walls in such a way that the suture always runs under the needle, the stitches being taken close together. The small bridge of gut wall overlying the needles is burned or scraped away and the needles removed. The posterior suture is now continued, completely burying the opening in the apposed gut sections. The silk sutures are now withdrawn and the operation completed.

Gordinier is of the opinion that *acquired diverticula* of the *intestine* undoubtedly occurs more frequently, and also more frequently give rise to clinical symptoms, than the reported cases and autopsy findings indicate. Gordinier records a quite interesting case in point.

Laplace reports 5 cases of epilepsy treated by *appendicostomy* and

irrigation of the colon. He does not consider that all cases of idiopathic epilepsy will improve under the treatment; but only those whose existence can be traced to this particular cause. Proper dietetic measures are essential for the success of the treatment. Tuttle has collected 77 cases in which appendicostomy was employed. Appendicostomy has been chiefly employed in chronic amebic dysentery, mucomembranous colitis and syphilitic ulcerations of the colon. In all of these conditions it has proved almost uniformly successful. Tuttle comes to the conclusion that the relationship between chronic appendicitis with adhesions and chronic mucomembranous colitis is a very close one.

Armstrong mentions the finding that in a large percentage of the cases of *malignant disease* of the *intestine* there is a regular daily rise of temperature; when the growth is situated in the rectum hemorrhoids may develop suddenly. Meyer states that in cancer of the colon, a periodic contraction within the abdomen—the so called “subjective stiffening” is a very valuable sign. Boas emphasizes the fact that the disease must be recognized early; he calls attention to the finding that the classic triad of symptoms—tenesmus, obstruction or diarrhea, and blood and mucus in the stools, are not observed at first in every case. In every case of tenesmus it is the physician’s first duty to ascertain the cause; Boas calls special attention to the odor of the underclothing in cancer of the rectum. The stools are peculiar. Another striking feature of the condition, is the persistency of the diarrhea in spite of treatment. Boas considers the presence of lumps of feces in the descending colon and sigmoid flexure of diagnostic value. Bloodgood’s monograph is of great interest; he advises resecting a very generous portion of the apparently uninvolved intestine on each side of the palpable tumor; it is equally essential that a large area of the mesocolon be included with this portion of the bowel, whether the glands are palpable or not. Primary colostomy is not advocated by Bloodgood. Evans transplants the levator ani muscles and neighboring fascia to the bowel after the diseased area has been excised, and before the bowel has been stitched to the anus. The fan-shaped drain is introduced posterior to the bowel and anterior to the coccyx. Evans claims that his modified technic is productive of the so-called “third sphincter.”

Moschowitz has reported an instructive case of *volvulus* of the

*sigmoid* in which suturing of the bowel to the left half of the anterior abdominal wall by means of interrupted silk sutures to the extent of about  $2\frac{1}{2}$  inches, was followed within 4 weeks by internal strangulation and death. Autopsy revealed coils of small intestine incarcerated in a pocket between the sutured sigmoid and the anterior abdominal wall.

The main features of Nichol's technic, which can be employed in *inguinal* as well as *femoral hernia*, are.—1, The employment of the sac to form an intra-abdominal buttress over the internal aspect of the hernial opening or ring; 2, use of the pubic ramus as a *point d'appui* process of closure of the hernial canal, and 3, the additional security of closure obtained by the superposition on the bone sutures of a plane of fascial sutures. Coley pleads for simplicity and end-results in the treatment of hernia. In femoral hernia, Coley employs the circular suture devised in 1881 by Cushing and others; the purse-string suture of kangaroo tendon has been employed by Coley in 100 cases of femoral hernia. He has not had a single recurrence. Eastman has devised a method for introducing a single tier of nonabsorbable sutures which coapt all the layers either according to Ferguson's or Bassini's method; the sutures may be easily removed after firm union has taken place. Bartlett reports continued success with his wire filigree.

The Mayos have reported 1500 operations upon the *gallbladder* and *bile passages*, with only 66 deaths. In the last 500 operations the mortality was only 3.2 percent. Of 845 cholecystotomies the mortality was 2.13 percent, while of 319 cholecystectomies it reached 3.13 percent. Of 217 cases in which cholecystostomy was performed there was an operative mortality of 1.47 percent. In 86 of the 1500 cases the pancreas was involved to such an extent as to be noticeable on examination. Two of the 4 cases of acute pancreatitis died; of 6 cases of subacute pancreatitis, 5 recovered; of 9 cases of pancreatic cancer, 5 died; in 67 cases there was visible chronic pancreatitis present. Mayo says: "Remove the disease while still in the gallbladder by a mortality of from 1.47 to 1.62 percent." Of the operations for uncomplicated stone disease, the mortality —  $1/3$  of 1 percent, was due to accidental causes; complications, the result of delay, caused more than nine-tenths of the mortality in Mayo's cases. Ransohoff reports a case of rupture of the common duct in which there was a localized jaundice of the umbilicus; he believes that further observa-

tions will give to this localized jaundice some value as a sign of free bile in the peritoneal cavity.

Fenwick contends that it is the extreme shortening and retraction of the ureter and of the orifice which seems characteristic of *tuberculosis* of the *poles* of the *kidney*, the middle portion being comparatively healthy. Fenwick concludes that a "retracted," dragged out ureteral orifice denotes, when well marked, tuberculous infection of the kidney. The feeling of a thickened ureter by the vagina or bowel should cause the medical attendant to suspect tuberculosis. In more than 18 percent of Fenwick's cases of tuberculosis of the kidney he has found extreme shortening and thickening of the ureter present. He says: "This knowledge may allow us in the future to resect the upper and lower poles and to leave the healthy middle of the kidney to go on working for the good of the body. We have only to recognize the disease early enough and be prepared to act if the middle third of the kidney permits resection." Howard Kelly asserts that he has never met a case suggesting an ascension from the bladder to the kidney; he finds that there is a common association between renal tuberculosis and tuberculosis of the uterine tubes and of the uterus itself. The association of tuberculosis with hydronephrosis is, in Kelly's opinion, remarkable, especially with stone. Kelly finds that strictures of the ureter are very common in renal tuberculosis.

The true value of *renal decapsulation* is an open question. Pons-son considers decapsulation inferior to cutting into the organ in cases of acute nephritis. He challenges the statement that these decapsulation operations could actually cure chronic nephritis; he regards, however, the operation favorably in these cases. Pinard favors decapsulation of the kidney in cases of anuria complicating puerperal eclampsia, but not in eclampsia without anuria.

Watson reports a case of bilateral *nephrostomy*. Permanent drainage of both kidneys through the loins by means of a special apparatus devised by Watson, enabled the patient to be up and about without special discomfort.

DaCosta presents a modified technic for performing *nephropexy* in cases of movable kidney. The usual operations for movable kidney fail, according to DaCosta, to lift the kidney up sufficiently; all operations leave it too low. DaCosta employs a slightly oblique incision and exposes the kidney after Senn's method; the Edebohl technic of



delivering the kidney is followed; after removing the fatty capsule, the fibrous capsule is either scraped with a needle and rubbed with gauze, or the kidney is decapsulated; the iodoform gauze slings are then placed—one beneath and one above the kidney, thereby suspending the kidney in proper position. The gauze slings are prepared as follows: The ends of two pieces of iodoform gauze are sewed together with small, plain catgut, thereby making a sling for the upper pole of the kidney. Two more pieces of iodoform gauze are sewed together in the same manner, serving to form the sling for the lower pole. The suturing enables the strips to be readily removed after the catgut becomes absorbed. The suture line of each piece of gauze is placed on the external surface of the kidney (as the organ lies upon the patient's back) so that when the organ is restored to its position, the suture line will be on the anterior surface. After the two pieces of gauze have been placed about the kidney and the organ restored, it is essential that a large piece of iodoform gauze be placed beneath the lower pole, so as to fill the cavity, that surely exists there, and to stimulate granulation to fill it up. Another and a smaller piece of gauze is now pushed down on the posterior surface and sides of the kidney. Four pieces of gauze have thus been introduced, but after the catgut sutures have become absorbed there will be 6 pieces of gauze to be removed in due time. The external wound is practically closed. The secondary sutures are tied after the gauze has been removed, although they were placed at time of operation. DaCosta reports excellent permanent results.

Werelimes' technic of nephropexy differs from that advocated by Edebohl in that he cuts two flaps out of the capsule; to the end of each flap he ties a strong silk ligature armed with a needle; the kidney is then pushed down into the wound and the inner ligament or flap of the capsule is drawn through the quadratus lumborum, and the outer one through the thinner muscles in front of the fascia; the remaining border of the deflected capsule may be sutured to its transversalis fascia. The muscular layer is sutured over the kidney; the latter is then drawn up against the denuded muscles by the artificial capsular ligaments, the ends of which are tied and the knots transfixed.

Lund, Nicholson and others report very interesting cases of *congenital cystic kidney*. Lund impresses the fact that the lesion is bilateral in 98 percent of the cases; that a cystic kidney, while causing pain and disability by its enlargement, may still be performing so large

a part in urinary excretion that its removal would be dangerous to life from renal insufficiency; that it becomes important if possible to take some measures to diminish the size of the offending organ and anchor it in place without interfering with its secreting function. Free incision and puncture of large cysts and suturing the organ in position are strongly recommended by Lund. Nephrectomy must never be performed until the other kidney has been found and ascertained to be functioning fully.

The value of the cystoscope in diagnosing lesions of the *bladder* and *ureter* can not be gainsaid. Very recently Newman and Lewis have so modified their instruments that it is possible to do better and more accurate work. Newman has presented an excellent monograph which is worthy of study. A few of his conclusions follow: 1, A dilated ureter orifice, the lips being thickened and only slightly rounded, the mucous membrane between the lips of a dark red color, while the mucous membrane of the bladder is deeply congested and pigmented, especially along the line of the ureter, denote descending ureteritis with dilatation. 2, Pinhead contraction of the mouth without other vesical changes denotes spasm induced by the presence of a rough calculus impacted in an irritable ureter. 3, Inflammation of the mouth and thickening of the lips, with inflammatory changes limited to the mucus membrane immediately surrounding the ureter orifice, denotes mechanical irritation of old standing.

Sharpe has attempted to obtain more satisfactory results in cases in which it is necessary to excise a portion of the ureter, by performing *ureteroureteral anastomosis*. His experiments on animals convince him that intraperitoneal trans-ureteroureteral anastomosis is an anatomic possibility and a physiologic success. More extensive research will be made.

Rovsing has found that the injection of 50 cc. of a 6 percent solution of phenol warmed to about 30°C is a very efficacious method of treatment in *tuberculosis* of the *bladder*. Rovsing permits the solution to remain for 3 or 4 minutes, then withdraws it by means of a catheter; this process is repeated at each sitting until the solution withdrawn comes out somewhat clear; a suppository of 2 cg. of morphin is introduced into the rectum immediately after the injection; the injections are made 2 or 3 times a weeks. Rovsing claims excellent results in cases in which the primary focus is in the bladder.



Recently, Natanson and Zinner have added several cases of *intraligamentary bladder* to the report of Zregenfesk's historic first case. Natanson and Zinner lead us to believe that the anomaly is not as rare as is commonly believed. They regard the condition as essentially congenital. The broad ligament is usually opened up as high as its limit at the Fallopean tube; so that the tube and ovary lie on the upper surface, over which the round ligament of the uterus passes forward. It is important to bear in mind the fact that the bladder, however distended, is purely a pelvic organ in these cases, and there is, even when it is full, a big pouch of peritoneum between its anterior surface and the pubes. The position of the ureters and uterine arteries is greatly modified.

Young concludes that *cancer* of the *prostate* is quite common. About 1 case in 7 of prostatic enlargement in men past 50 years is cancerous. The early diagnosis may be made when there is marked induration, and the absence of the usual intravesically projecting lobes, as shown by the cystoscope. Young concludes that every indurated enlarged prostate should be suspected to be carcinomatous.

Chrobak discusses the indications and technic of *artificial sterilization*. He considers chronic nephritis an absolute indication. His technic consists in removal of the entire tube on either side, and amputation and suture of each uterine horn. Chrobak has found that partial resection of even large portions of the tubes, with careful ligation of the stumps, do not always secure sterilization. Rockey detaches the end of the tube from the uterus by means of a V shaped incision, excises the projecting portion of the wedge shaped point of the tube, sutures the cuff to the uterine fundus just back of the original position and then closes the V in the cornua by means of two suture which also grasp the tube. Rockey's technic seems commendable.

The secret of success in the treatment of *uterine cancer* is early diagnosis and early, complete excision. Sampson strongly emphasizes the necessity of excising a large portion of the parametrium in cases of cancer of the cervix. He bases his contentions on the following facts: 1, The parametrium is so frequently involved; 2, the growth is local in one-half to two thirds of the operable cases, and probably 40 percent of the extensive ones. It has been observed by Sampson that a parametrium may feel normal and yet contain cancer, a parametrium may feel indurated and yet show no evidence of can-

cer in it. The pelvic lymph nodes are involved in one-third to one-half of the operable cases. In operable cases of uterine cancer, Chrobak continues to praise repeated curettage and cauterization. Chrobak favors the fluid caustic; he found that the cases which remained free from recurrence the longest were all cauterized with fuming  $\text{HNO}_3$ . He applies it on a stick or a roll of asbestos. The ever present danger in curettage is bladder perforation, rectal perforation, or entering the peritoneal cavity. After cauterization, a powder, consisting of iodoform and charcoal, is scattered in the vagina.

There is no doubt that the best treatment of *fibroids* of the *uterus* is early excision. American surgeons have long advocated excision. Very recently, Pfannenstiel has asserted that since fibroids develop on a basis of chronic endometritis, the rest of the uterus is not sound, and the organ should be removed, save in exceptional cases. Oviatt concludes that since adenocarcinoma of the uterus occurs much more frequently in cases of fibroid tumor than does cancer of the cervix, there must be a direct causative relation between fibroid tumors and cancer of the body of the uterus. Piquand collected 350 cases of uterine fibroids followed by uterine cancer; he concludes that the frequent association of cancer with fibromyoma is a strong argument in favor of hysterectomy whenever the tumor develops. Winter has studied 753 cases of uterine fibroids and found that cancer of the cervix was present in 2 percent of all cases of uterine fibroid-disease, whilst cancer of the body of the uterus was present in 1.2 percent of the cases. Reed expresses the consensus of opinion when he says that the only safe place for fibroid of the uterus is outside of the body. Very recently Griffith and Williams have reported a case of uterine fibromata showing sarcomatous changes. Winter found sarcomatous changes present in 5 percent of his 753 collected cases.

Howard Kelley avoids peritoneal contamination during removal of an *infected fibroid uterus*, by first tying off both broad ligaments down to the cervix and uterine vessels; then, in order to hold the cervical stump well up in the pelvis, he passes a strong catgut ligature through the tied off ovarian vessels, under the uterine vessels and out through the round ligaments on each side; the ligature also serves to control hemorrhage from the uterine vessels. An additional ligature is passed separately around the uterine vessels. After freeing the uterus down to the cervical portion and so cutting that the attachment of the fibroid uterus above is gradually narrowed down to the cervical canal,

it is possible to grasp the exposed cervical canal with an artery forceps, and proceed to amputate just below the latter with a Paquelin cautery, thereby removing the uterus in a perfectly aseptic manner.

The experiments of Bond and Horsley convince them that it is by no means established that *hydrosalpinx* in the human is an inflammatory state; they incline to the view that it is an accumulation of the secretion of the mucous membrane of the tube. Bond mentions the finding that compensatory hypertrophy of the ovary observed in the rabbit does not seem to be found in the human subject in case of removal of one gland. In the rabbit the compensatory hypertrophy is largely dependent upon the continuation of coitus and the occurrence of pregnancy. Norris claims that one in every 4 to 6 cases of *tumor* of the *ovary* is malignant.

During the discussion following a symposium on *retrodisplacements* of the uterus, Da Costa stated that the suspension operations, so called, were failures because they were fixations. Da Costa uses two very fine (not over No. 2) silk sutures, taking up the peritoneum and fascia, and only a little bit of the muscle, tying the ligatures in the middle line; one, or possibly two, through and through silver sutures are passed back of the uterus to prevent any stripping off of the peritoneum from the abdominal wall. Da Costa has had very satisfactory results since employing proper technic. The Alexander operation continues to be, according to Noble, the ideal technic in uncomplicated cases of retroversion.

Dudley presents an apparently decidedly satisfactory technic for the cure of *prolapse* of the *uterus*. He proposes utilization of the broad ligaments as supports of the pelvic floor, without removal of the uterus. Dudley pushes the bladder upward, after having separated it from the anterior vaginal and uterine areas; then severs the lower  $\frac{2}{3}$  of each broad ligament, approximates their ends by end to end anastomosis in front of the uterus; excises the redundant vaginal wall, and sutures so that all sutures catch up the uterine wall, thus forcing the bladder up so that it can not come down again between the uterus and vagina. Dudley emphasizes the fact that this forcing up of the bladder is a very essential factor in the success of the operation.

In the treatment of *chronic endotrachilitis*, Craig advocates thorough curettement of the cervical canal so as to completely remove the cervical mucosa. The entire denuded canal is then asepticised by

applications of iodized phenol; the vaginal vault is filled with powdered boric acid, and a 33 percent ichthyol and glycerin strip is placed against the os internum and about the portis vaginalis. Preparatory treatment consists of three 1/5000 formalin douches daily for three days before operation; the postoperative treatment consists of a similar douche daily for 10 days after operation, with the avoidance of unusual exertion and abstinence from sexual relations.

Liepmann's experiments tend to bear out the contention that *eclampsia* should be treated by prompt delivery. His findings corroborate the assertion that a toxin is present which has more or less specific action on the brain, liver and kidneys.

#### EPIDIDYMITIS.

Johnson reports excellent results following the application of adhesive strips, which latter are so placed that they form a sling. The technic follows: After shaving the parts, the patient being in dorsal decubitus, a strip of zinc oxid plaster  $2\frac{1}{2}$  to 3 inches wide is applied to the lower abdomen, from  $1\frac{1}{2}$  to 2 inches from the median line; the strip, face upward, is taken around and under the scrotum, elevating the testicles to a level at least as high as the penopubic angle, and forming, as it were, a sling; the other end of the strip is passed upward on the opposite side of the median line of the abdomen. A second strap is similarly applied, and adjusted about the scrotum; a few short straps are placed across the anterior portion of the scrotum. Johnson emphasizes the fact that there should be no pressure made on the inflamed tissues.

#### TENOSYNOVITIS.

Cignozzi contends that the rice bodies which are seen in chronic tubercular tenosynovitis are formed in virtue of a two-fold mechanism. They are products of pedunculated growths on the inner wall of the sheath, which become detached, thus forming the nuclei of the rice bodies. Secondarily, these bodies are formed as the result of coagulation of fibrin in the sheath.

#### DUPUYTREN'S CONTRACTION.

Keen has successfully modified the usual technic employed in the treatment of this affection. The operation was performed under local anesthesia—a few drops of a 4 percent cocain solution were injected into the neural sheath. A trap-door incision, with its base looking

toward the wrist, was made; the flap consisted of all the tissues of the palm down to the sheath of the tendons; the entire palmar fascia was then excised. Primary union followed. The results were satisfactory. Keen holds that the technic is especially advantageous in advanced cases where there are distinct bands already formed.

#### FRACTURE OF OLECRANON.

Murphy concludes that operative treatment is the most advisable. He favors subcutaneous ex-articular wiring. He has found the treatment quite satisfactory.

#### BONE CAVITIES.

The filling of bone cavities with the preparation advocated by von Mosetig continues to prove quite efficacious. Moore has secured excellent results with the following easily prepared wax: Spermaceti, 8 parts; olive oil, 2 parts, and iodine, 1 percent. The spermaceti is melted at a low heat on a water bath and the olive oil is added. The heat is withdrawn, and the iodine dissolved in the liquid and stirred until it congeals. Heat must not be added after the iodine is added, on account of its volatility.

#### BONE TRANSPLANTATION.

Donald succeeded in transplanting a segment of bone about 2 inches long, composed of half the thickness of the fibula, with its attached periosteum, to supply a section of the tibia on the same side which had been removed for acute suppurative osteomyelitis. Seven months after the placing of the bone graft the lad could walk quite well. A few years ago N.B. Carson successfully transplanted a 1-inch section of one of the bones of the forearm to bridge a 2-inch defect following a gunshot injury of the accompanying bone of the forearm. The end-results were quite satisfactory.

#### ACUTE OSTEOMYELITIS IN CHILDREN.

Edmund Owen contends that *delirium*, indeed, is one of the most characteristic features of acute osteomyelitis in children, and that it denotes very serious intoxication. In some cases it closely simulates the picture of *delirium tremens*. Owen says: "All that one has to do is gently to squeeze the lower end of the femoral diaphysis between the thumb and finger, grasping it just above the condyles, when, whether the boy is clear headed or delirious, or comatose under the



influence of a patent animal toxin, he is sure to scream out." He adds: "It is imperative to be early at such an operation, for the longer that the tension in the bone is allowed to remain unrelieved, the more serious and desperate will be the thrombosis and necrosis."

#### FLAT-FOOT.

Berry believes that during the earlier stages of flat-foot the most important points to be recognized are the gait and the position of the foot at rest. The most characteristic thing about the gait is the outward rotation of the feet and the rolling in of the ankles. In the standing position, the prominence of the internal malleolis and the turning out of the foot show that the weight of the body passes far within its normal line. Berry calls attention to the loss of elasticity in the walk and the aching pain in the feet.

#### ACUTE ANTERIOR POLIOMYELITIS.

Spiller, Frazier and others affirm that the result of nerve transplantation in the treatment of this affection have been so satisfactory that the operation in selected cases is established. Operations of this character are based upon the physiological law that the central end of an efferent fiber can make functional connection with the peripheral end of any other efferent fiber of the same class, whatever be the normal actions produced by the two nerve fibers.

#### ANKLE DRAINAGE.

Bolton presents a very satisfactory and efficacious plan of draining the ankle in cases of severe infection following injury. The plan adopted consists in excising the astragalus and the drainage of the joint through the space so created. The method to be used in establishing the excision varies naturally with the character of the original injury. Bolton records very flattering results. The limb is not shortened more than  $\frac{1}{2}$  to  $\frac{2}{3}$  of an inch and the function is not destroyed.

#### BIER'S HYPEREMIA.

The continued favorable reports corroborate Bier's contentions. Great care is necessary. The medical attendant must be conversant with the technic.

[617 Euclid Av.



## Dietetics.

*(Concluded from page 341, December Number.)*

W. H. Allchin handles the "Dietetic Treatment of Obesity." The fat is formed directly from the fat and indirectly from the proteid and carbohydrate foodstuffs. This shows that no possible diet can of itself entirely prevent fat formation. At the same time one must recall that the chief source of the fat in the tissues is the carbohydrate food under normal circumstances.

Allchin thinks it is difficult to say whether any of the body fat is ordinarily formed from the proteids either of food or of the tissues. Recent experiments tend to show that the fat in fatty degeneration is transferred from some fatty deposit.

"Inasmuch, then, as the body fat is derived from the food which represents the potential energy of the organism, which should normally be converted into actual energy chiefly by oxidation in the tissues, an accumulation of fat usually expresses a disturbance in the relation of the ingesta to the work done."

The first factor, then, is an excessive intake, the second diminished muscular exercise. The problem presented being so to regulate the nutrition as to avoid further storage of fat, and to work off by oxidation the excess which has already accumulated.

When the corpulence is associated with an excessive intake, the reduction of the dietary as a whole may be imperatively called for, but since it is the carbohydrate constituents of the food that are the chief sources of the fat, so it is their reduction that has especially to be taken in hand. The ordinary amount of fat taken—1 or 2 ounces, may be in a great measure disregarded, unless the regimen be particularly severe. Allchin maintains that the nitrogenous food may be increased, since by its metabolism the consumption of the body fat is stimulated, and the individual lives on his own tissues.

The caloric value of the daily diet may require to be diminished to one-half to normal or even less (1000 calories).

In the anemic obese, with flabby hydremic tissues, a diminution in the fluid intake may be advisable; but it is certain that, as the diet becomes increasingly nitrogenous, fluid should be given, and almost without limit, to wash out the excessive waste.

"Dietetics in Consumption and Other Wasting Diseases." Mac-kenzie thinks the amount of food is of more importance than the kind or quality. We should rid ourselves of the notion that the average consumptive patient requires an altogether different dietary from a healthy person. With von Leyden, the author deprecates the senseless and widely prevalent use of artificial food products. He gives the dietary of Brompton Hospital which is certainly liberal; for instance, we notice boiled cabbage for Friday, roast pork and turnips, on other days. The food must be nicely served. Alcohol is never a necessity. Raw meat is highly thought of in France. Patients who are well and who take an adequate amount of food, *do not need cod liver oil*.

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"Dietetic Treatment in Epilepsy." Turner says the frequency of some forms of epileptic manifestations may be modified or reduced by careful attention to the diet. A diet rich in meat is productive of an increase in the number of epileptic convulsions, while one consisting mainly of farinaceous foodstuffs is usually accompanied by a decrease in the number of seizures. Alt's experiences lead him to the conclusion that a diet without meat was the most satisfactory, but that neither a milk diet alone, nor a vegetable diet, was as beneficial as their combination.

The general result of the "salt starvation" treatment has proved it a useful adjuvant to bromid medication, while in others little benefit has resulted.

Purin-free diet in epilepsy has been used; such a dietary may be selected from amongst the common articles of food: Milk, eggs, butter, cheese, rice, macaroni, tapioca, white bread, cabbage, lettuce, cauliflower, sugar and fruit.

Foodstuffs containing *small* quantities of purin bodies are: Pea-meal; malted lentils, potatoes and onions. In the last two the quantity is so small as to be almost negligible. Common articles to be avoided are: Tea, cocoa and coffee; all kinds of fish, fowl and meat, including bread.

Of the meaty foods which contain only relatively small quantities of purin bodies, and which might be added to the dietary, if not rigidly enforced, may be mentioned tripe, neck of pork and codfish.

Turner thinks that the elimination of the purin element from the dietary of epileptics is of great therapeutic assistance in the treatment of the disease.

"The Dietetic Treatment of Dyspepsia and Diseases of the Stomach" is handled by Habershon, who treats the subject in a manner as rational as his subject permits. Certain it is that "what is one man's meat is another man's poison" and that there are functional disturbances no one can gainsay. One must differentiate even the functional disturbances, and not forget the fact that the earliest manifestation of tuberculosis may be in a disordered digestion.

As the essayist says the subject is a wide one and many cases come under more than one category.

[We have not abstracted this paper in detail. True there is such a thing as dyspepsia, but in this guise too many patients with ulcer of the stomach, gallstones, cancer, incipient phthisis, renal disease and what-not, have slipped by some of us and we feel there is no place for dyspepsia as an entity].

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Passing by "Diet in Intestinal Disorders" we come to "Diet in Skin Diseases," by Malcolm Morris, and here, we think, there is a field for fine discrimination, notwithstanding that "each man must be a law unto himself." It is a well-known fact that shell fish and certain vegetables and fruits—strawberries, etc., give rise to eruptions in certain susceptible individuals. So, too, alcohol and food produce in some, flushings (capillary changes), especially in the face.

Crocker maintains that whatever aggravates the gastric mucosa aggravates the skin trouble.

According to Smith, there are four ways in which diet may possibly influence the skin: 1, Through the general nutrition of the body; 2, by acting as a reflex stimulus from the gastrointestinal tract; 3, by absorption into the blood of irritating substances or of products of chemical change, which indirectly affect the skin; 4, the skin may suffer in virtue of being one of the channels or avenues of elimination.

Morris says all that need be done, in his experience, is to adjust the diet to the character of the disease.

If it is acute, extensive in distribution and marked by troublesome subjective symptoms (itching, heat and pain), a simple diet is naturally indicated. But in chronic cases, when the skin lesions are of small extent and quiescent, no particular dietetic restriction, except in the matter of alcohol, is called for.

In acne and rosacea everything likely to cause indigestion must

be avoided. So, too, in erythema multiformis and dermatitis herpetiformis.

In pruritus ani and vulvæ, coffee and alcohol should be absolutely proscribed; shell fish, pickles, or highly-seasoned, salty or preserved foods should be avoided, and the diet should be restricted to white meats, green vegetables and light milk puddings.

In urticaria the responsible agent for the attack should be excluded, and the diet must be bland and unirritating for some days.

W. L. JOHNSON, M.D., St. Louis.

[2144 S. GRAND AV.]

### Astrological Therapeutics.

Babylonico-Assyrian civilization possessed in its earliest ages a well-developed system of astrologic medicine, as is evident from writings bequeathed to us from antiquity, Dr. Hugo Mangus tells us in his book, "Superstitions in Medicine." From the cuneiform tablets in the British Museum, the following rules appear, which the Assyrian and Babylonian court astrologers reported to the king :

Tablet 69.—If the wind comes from the west upon appearance of the moon, disease will prevail during this month.

Tablet 207.—If Venus approaches the constellation of Cancer, obedience and prosperity will be in the land, the sick will recover and pregnant women will carry their babes to a favorable termination.

Tablet 163.—If Mercury rises on the fifteenth day of the month there will be many deaths. If the constellation of Cancer becomes obscure, a fatal demon will possess the land and many deaths occur.

Tablet 232.—If Mercury comes in conjunction with Mars, there will follow fatalities among horses.

Tablet 175.—If a planet becomes pale in opposition to the moon or if it enter into conjunction with it, many lions will die.

Tablet 195.—If Mars and Jupiter come in conjunction many cattle will die.

Tablet 117.—If the greater halo surrounds the moon, ruin will be visited upon mankind.

Tablet 269.—If an eclipse of the sun occurs on the twenty-ninth day of the month of Jypar, there will be many deaths on the first day.

## CURRENT EDITORIAL TOPICS.

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### The Fate of Calomel in the Body.

We are pleased to find some pharmacological investigation of old drugs now going on; the physician is very apt to prescribe what has most recently been studied. The *New York Medical Journal*, October 13, 1906, recalls the well known clinical fact that not all calomel is excreted by the feces, some is absorbed and in large doses may produce the general symptoms known under the term "salivation." To quote :

"The swollen, painful and enlarged liver of the days of our fore fathers, following the enormous doses of calomel then given, needs only be mentioned to suggest that the cells of the liver must be acted on by this specific substance. The marked diuresis, so valuable an adjunct of calomel therapy, is also to be interpreted as a result of a specific irritation of the kidney epithelium; and the well-known action on the intestinal tract further speaks for a special stimulation by some soluble substance derived from the calomel."

The writer then gives the conclusions of some recent researches by Neisser, who experimented on dogs. This authority finds that the acid of the stomach has little or no action on the calomel, and no corrosive sublimate is found in the stomach within an hour and a half. The pancreatic juice seems to have the power of causing a solution of the calomel. The rôle of sodium chlorid in this solution was not determined. The writer concludes :

"As to the absorption of a portion of the calomel made soluble by the pancreatic secretions, the author believes that that this takes place not higher up in the intestine than the ileum, in which place the process of solution reaches its maximum. It is highly probable that the soluble mercuric compound set free is either absorbed in the large intestine or precipitated by the sulphides present in that viscus, since the feces contain no trace of soluble mercurial substances. The kidneys, the liver and the large intestine retain a portion of the calomel for a considerable length of time, but as to the form of mercury compound which is formed from the calomel in the process of solution, it is to be regretted the author does not enlighten us."



### Fruit as a Food.

"Of late years much has been written concerning vegetarianism. Not only has the literature on vegetarianism been extensive, but many have adopted its principles and have lived on a diet from which meat has been excluded. In Great Britain this practice has had a great vogue, so much so that vegetarian restaurants flourish in many cities, and especially in London. Some physicians, too, in England advocate the exclusive use of a diet devoid of meat, arguing that it is healthier than the ordinary diet to which civilized individuals have been accustomed for many centuries; and they point out that the Roman soldiers subsisted chiefly on food composed mainly of fruits, and that the Japanese of the present day are more or less vegetarians."

With these sentences, the *Medical Record*, October 20, 1906, introduces a discussion of fruit as a food, especially in the light of an article by Lanworth of the Department of Agriculture. He calls attention to the fact that fresh fruits are only dilute foods, the carbohydrate being most abundantly represented. Jaffa of the California Experiment Station undertook extended investigations in order to determine the health of those whose diet was largely composed of fruits.

"The result of these investigations was to show that, while they were too limited to warrant the foundation of any very definite conclusions, the statement might be confidently made that fruit and nuts should not be looked upon simply as food accessories, but should be considered a fairly economical source of nutritive material."

Experiments were undertaken to determine the digestibility of fruit, and the result proved that they are thoroughly digested and have a high nutritive value. To quote further: "

"With respect to the relative digestibility of different fruits, evidence is too scanty to make any exact statements, but apparently stomach digestion is influenced by the nature of the fruit and its stage of ripeness. Beaumont states that mellow sour apples require two hours for digestion in the stomach, and mellow sweet apples ninety minutes. Another observer has noted that about five ounces of raw ripe apple requires three hours and ten minutes for digestion in the stomach, but states that if the fruit is unripe, and consequently contains a high proportion of cellulose, a much longer time may be required. Apples are viewed, from an economical and nutritive standpoint, as the best of all fresh fruits, especially when eaten uncooked, while of dried fruits, dates and raisins rank the highest.



"The conclusions reached as a result of the studies were that, in general it may be said that fruits are wholesome, palatable, and attractive additions to our diet, and may be readily made to furnish a considerable part of the nutrients and energy required in the daily fare. Fresh fruits are dilute foods and closely resemble green vegetables in total nutritive value, but dried fruits and many preserves are much more concentrated, comparing favorably with some of the cereals and other dry vegetable foods in the amount of total nutrients and energy which they supply per pound. Characteristic chemical constituents of fruits are carbohydrates, and so they are naturally and properly used in a well balanced diet to supplement foods richer in protein, such, for example, as cereal grains, legumes, nuts, eggs, dairy products, meats, and fish. Intelligently used, fruits constitute a most valuable part of a well-balanced diet and may profitably be eaten in even larger quantities than they are at present by the majority of mankind."

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### The Present Neglect of Vaccination.

The practice of vaccination as a routine procedure is much less common now than it was a decade ago, and there are signs that it will still become less frequent, according to the *Journal of the Michigan State Medical Society*. "This observation is brought home with especial force to the physician who has had opportunity to observe any of the recent outbreaks of smallpox, or who takes the trouble to study such statistics as have been compiled from them."

The writer cites several examples of the laxity in this practice. The cause he gives as follows :

"Whatever influences may be ascribed to the antivaccination movement in England, or in certain of the Eastern States, it certainly plays a very small part with us. The chief factor here is beyond doubt a growing indifference to the importance of general vaccination on the part of the medical profession as well as the laity. The comparative rarity of the severe type of smallpox during the last two decades has induced a false sense of security. The younger generation, for the most part, has never seen the disease in its more dreadful forms, and the older one has well nigh forgotten it. The recent prevalence of a very mild type, scarcely more serious than chickenpox, seems, moreover, to have given rise in the minds of many to a vague idea that the graver type has disappeared—run out, so to speak—and that there is no longer any real reason for dread. To this general indifference must be added another factor which is too often undervalued, namely,

a genuine and more or less well founded dread of vaccination on the part of many who have observed in the case of friends or neighbors, or in the public prints, unpleasant and even serious results to follow it. It is not at all uncommon to hear a man say that he would take his chances of smallpox rather than be vaccinated, and the argument is not always an easy one to meet. The condition that confronts us is really potentially quite serious. We have a large and increasing unvaccinated population which would furnish a most fertile soil for the spread of an epidemic if it should once obtain a foothold."

The writer finds conditions very ripe for serious trouble in many parts of the country. He believes the remedy lies with the practitioners of medicine. The family physician has the most influence with the people and he should see that the children are properly and carefully vaccinated.

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## YESTERDAY AND TODAY.

DEPARTMENT EDITORS.

Dr. E. A. Babler, Surgery.

Dr. Adrian Bleyer, Medicine.

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### Chloroform in Pertussis.

More than 50 years ago, soon after the discovery of chloroform as a general anesthetic, this drug was suggested as a remedy for whooping-cough. Churchill (1853) reported a series of cases of pertussis so treated and his results were very good. In older children it reduced the number of paroxysms and in many cases promptly and permanently arrested the disease, as in the following :

"Miss D., aged 16 years, had had whooping cough a month, when I prescribed chloroform. There was no complication, but the whooping was frequent, especially during the night. She was directed to have the chloroform in readiness, and to use it with each paroxysm, and she assures me that in two days the whoop ceased. The cough lasted a few days longer, but it was slight and not in kinks."

Dr. Todd (*Medical Times and Gazette*, 1854), in a general discussion of the subject, wrote as follows :

"If I had an opportunity of treating whooping-cough on a large scale, I would, in cases in which the paroxysms are very frequent and

severe, and when, as yet, the lungs are free from congestion, but not otherwise, give a fair trial to the careful inhalation of chloroform, with the view of endeavoring to cut short the paroxysm. We know that we can arrest the paroxysm of asthma in this way; why, then, should we not be able to do the same with that of whooping cough. I have also known laryngismus stridulus relieved by the use of chloroform; and it is now well proved that other convulsions of children may be checked by its means.

In the cases of delicate children, where there is great reason to fear that damage may be done to the lungs by the cough, this practice may prove very useful. But with reference to the administration of chloroform, this fact should always be borne in mind, and it can not be too frequently reiterated, that due provision should be made for the simultaneous free admission of air, along with the vapor of chloroform. There is no point upon which some men seem to be more foolhardy than on this one; and it is by the neglect of attending to this, that the reputation of one of the most valuable remedies that has ever been applied to the relief of human suffering may be seriously damaged. I do not advise you to give chloroform so as to produce its full effect; it may be inhaled in small doses of 10 or 15 minims, which may be repeated at intervals, according to the severity of the paroxysms. When children are already in an exhausted and very depressed state, chloroform ought not to be administered by inhalation, or it should be given only in the smallest quantities."

This treatment was dropped later because its effect seemed uncertain and not entirely devoid of danger. Now, it promises to be revived in a new form as appears in an editorial in the *Medical Record*, September 15, 1906 :

"With the advent of the whooping cough season, certain observations on the treatment of this obstinate and annoying condition recently published by Rothschild and Bruner should prove of interest. A child under treatment for congenital dislocation of the hip and a subject at the same time of an attack of whooping cough, was anesthetized with chloroform preliminary to reduction of the dislocation. It was noted after the operation that the cough had completely disappeared. In another case of pertussis the chloroform was administered with this especial purpose in view, and a similarly favorable result was obtained. In 3 other instances the sleeplessness and vomiting ceased at once after the anesthesia, but the cough lasted for several days; while in a number of others a cure did not follow the treatment until the end of 1 or 2 weeks. The chloroform was given until complete muscular relaxation was obtained, but without the corneal reflex being lost.

The narcosis was kept up for from 5 to 10 minutes, and in no cases did any unpleasant sequelæ supervene. The writers believe that the good effects of the chloroform in these cases depend primarily on its antispasmodic action. The cough of pertussis is reflex, and proceeds from an irritation along the interarytenoid region, the nose, or the tonsils. The stimulus finds its way to the centers in the medulla, which have already been brought to a condition of extreme irritability by the toxins of the disease. The chloroform not only exerts a sedative action on these centers, but during its passage along the respiratory passages it also acts as a local antiseptic. A few other observations of a like character are to be found in the literature, but this is probably the most extensive series of cases in which the drug has been used and the favorable results obtained. The simplicity of the treatment renders this therapeutic suggestion worthy of further trial."

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### **The Radical Cure of Hernia.**

In ancient times attempts were made to secure a cure for those suffering with a hernia. It is true that in many instances the technic employed was not only barbarous but even mutilating.

Celsus was perhaps the first to attempt an operation for the radical cure of hernia. He made an incision down upon the hernial sac and pushed the omentum back; the sac was then tied off and the wound closed. Whether or no he attempted to stretch together the pillars of the ring and all of the soft parts remains an open question. It is a fact, however, that he confined his operation chiefly to children.

A century later Heliodorus described an operation for the radical cure in the following words :

"A free incision is made down to the hernial sac. After carefully exposing the sac we must cut the latter off with great care. If we take off less than is protruded the result will be the production of a new hernia, for the edges of the wound will be slack, and the way prepared for the slipping out again of the intestine. If one resects more than is protruded, then the hernia will recur, for the edges of the peritoneum, because of the too great resections, can not be brought together and the patient is in danger, because the normal parts have been taken away."

It seems quite obvious that Heliodorus appreciated the fact if the peritoneum and transversalis fascia retracted, a weak point remained in the abdominal wall.

From the days of Heliodorus to the year 1846 divers methods were resorted to by the various operators and medical attendants. Cauterization, ligation of the sac and spermatic cord subcutaneously, suturing of the canal and sac either subcutaneously or through an open wound, excision of the whole or part of the sac, excision of the testicle, combined with the actual cautery, have all been tried and found wanting—not only inefficient, but even barbarous. In many instances exfoliation of the bone followed the extensive and deep cauterizations. Even up to the early part of the Christian Era it was a not uncommon practice to apply a red-hot iron over the external ring, burning deeply to the bone.

Following this extreme barbarity came the advocacy and, I am sorry to say, the practice of excision of the cord, sac and testicle. To Paul of Aegina belongs the discredit of the introduction of this inefficient, barbarous and mutilating practice. The technic became so extensively practical in France that the French Government was forced to promulgate laws prohibiting same.

History indicates that Pierre Franco was the first to perform a cutting operation for incarcerated hernia. His lecture gained many adherents and was extensively employed.

Henry O. Marcy of Boston was certainly the first to introduce the absorbable catgut suture, and the antiseptic principles of Lister, into this field. The name of H. O. Marcy and the operative technic of hernia go hand in glove.

In 1880 Bassini gave us a most excellent technic—one that has been productive of very flattering results. The operation is too well-known to need description. It is true, however, that relapses have been observed. It is equally true that in many instances the fault was in the operator rather than in the principles advocated by Bassini.

At the present time there are many modifications of the Bassini operation. To-day we actually possess and practice the radical cure operation.

In 1903 Halsted presented a modification of the Bassini operation, which has been found of decided value. The cord is not shifted; mattress sutures draw the cremaster under the internal oblique and transversalis; the internal oblique is sutured to Poupart's ligament; the external oblique is then overlapped. The success of the operation depends upon anatomic relations. A cross section after comple-



tion of the operation shows a distinct doubling of tissues accomplished at all points, and a trebling at points of needed strength.

Many prominent surgeons simply suture the conjoined tissues to the cremaster muscle and Poupart's ligament, and then suture the incised edges of the aponeurosis of the external oblique, thereby obtaining excellent results. It is quite reasonable to feel that the present day technic should procure a radical cure in practically every case of hernia not previously operated.

Many years ago Phelps of New York found that a silver wire filigree enabled the surgeon to secure satisfactory results in patients with very large, and previously operated, herniæ. Phelps certainly deserves great credit for his painstaking studies along these lines.

Clinical experience and everything else point to the important fact that there can be absolutely no reasonable and satisfactory reason why a person should be permitted to travel life's pathway with a hernia. The ever present dangers and annoyances are wholly unnecessary.

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### The Treatment of Sore Nipple.

The medical attendant has ever been brought face to face with the question of treatment of sore nipples. It is especially interesting to know how the ingenious practitioner sought to obviate placing the baby on artificial food. In an early number of the *Edinburg Medical and Surgical Journal*, appears the following :

"It is difficult to conceive why many practitioners (especially those in provincial towns) who are strenuous advocates of all mothers nursing their own children, can in so many instances see them relinquish the office, when the infant is but a few weeks old, on account of the excruciating pain arising from sore nipples. Did they but constantly have recourse to the false nipples, now so generally used in London, and so easily procured in every part of the country, almost every case of mere excuriation might be cured in 2 or 3 days.

"The false nipple is composed of two parts—one of metal and the other of skin. The metal shield is so formed that the 'skin' does not come in contact with the nipple. The 'skin' is the teat of a fresh slaughtered cow, which is prepared as follows: The teat should be white and delicate; the inside is carefully scooped out so as to leave the teat about the thickness of Morocco leather. If the operator should unfortunately make the smallest puncture in the side of the



skin, of course it would not act, and must be thrown away. After being well washed in cold water, the teats must be kept in spirits till an hour or two before using, when they must again be laid in cold water to take away all taste of the spirits; the teat must then be wiped dry and secured closely and firmly at the edge to a row of holes made in the shield, after which it need not be unsewn till it is become bad from use, and must be exchanged for a fresh one. But in the meantime great attention must be paid to wash the whole thoroughly after suckling, and to keep it constantly in cold water; or if the weather be hot, in spirits and water, rinsing it well in the latter case before using. The teat should project somewhat longer than the silver shield or it will not yield to the child's mouth."

How different today! What a boon the rubber shield! Imagine using a cow's teat for a nipple. How ingenious and yet how different from the soft, pliable, sterilized rubber contrivance. And yet we have not attained success in the preventive treatment of sore nipples. Some practitioners advocate the bathing of the nipples during the last months of pregnancy with alcohol and boric acid, while others are of the opinion that these hardening preparations simply make the nipple more prone to crack during lactation; they advocate the application of ointments in place of alcoholic lotions.

The present day treatment of sore nipples is quite variable and oftentimes quite unsatisfactory. Each practitioner advocates a different method; every case is a law unto itself. We all remember the cardinal principles to be observed—the care of the breasts before and after nursing; the care of the baby's mouth, and the much-needed rest. It is undoubtedly true that the breast pump is being condemned by many practitioners; the massaging of the breast in case of sore nipple yields far better results than the evacuation of the breast by means of the pump. And yet we find practitioners, especially in the country (and, I am sorry to say, in the city as well) who persist in advising the application of the breast-pump.

It is advocated that the infant be nursed only on the well breast, during the time the corresponding breast is sore; the nipple must be carefully cleansed, the breast massaged, and the parts protected with some soothing application.

Since Dr. E. W. Saunders has promised us an Original article on the subject, I beg to refer the reader to same. Dr. Saunder's article will appear in an early issue.

ST. LOUIS

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## ORIGINAL ARTICLES

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### SOME CONDITIONS EXPERIENCED IN CASES OF ORDINARY LABOR THAT HAVE CAUSED ME AT TIMES CONSIDERABLE DISCOMFORT.\*

BY FRANCIS REDER, M. D., ST. LOUIS, MO.

This is not the first occasion that I have given thought to my obstetrical experience. In going over the ground of my work in this particular branch of medicine I frequently have had cause to apologize for ignorance.

This was not wholly due to a want of a complete knowledge of the pelvis in its healthy as well as in its diseased state, nor could it be attributed to a lack of a full understanding of the mechanisms of the various presentations. It was rather due to a lack of acquaintance with the powers of nature governing the phenomena of labor that the proper and judicious application of skill was either delayed or not applied at all, whereby I could have saved my patients much pain and danger.

Labor is a natural act and in order that it can be conducted to a happy issue the practitioner should be well acquainted with its phenomena;—the order or succession of them;—be able to decide, when certain of them are wanting, or when others are in excess;—to estimate the relative or positive importance of such;—the force or effect of each pain;—the necessity of preserving or of wasting the waters;—the degree of resistance the os uteri or external parts may offer;—the situation of the former, as regards the presenting part;—the certainty of the presentation;—the mode of rectifying any error of presentation in proper time, and the capacity of doing this with the greatest advantage to the patient and to the infant.

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My early experience has taught me not to be officious during the active state of pain when all things are doing well. All directed measures will always have penalties attached to them, and it is only by taking a proper view of the nature of the labor that it can be conducted to a happy termination. There is no one circumstance that so largely and certainly contributes to divert nature from her proper course as the persuasion that art can always benefit her. So long as all things are doing well the active duties of the accoucheur are limited indeed. It is but when the contrary obtains that he can be said to be positively useful.

In ordinary cases of labor it occasionally happens that one or more things are not doing well, the most frequent of which, in my experience, being *unusual rigidity* of the soft parts. By this I mean that the os uteri and the perineum offer an unusual resistance to the efforts which the fundus and the body of the uterus make to expel their contents.

To determine the cause of this unnatural resistance and how to remedy it has frequently caused me considerable concern. Unless the cause can be determined, attempts to overcome the resistance by increasing the force of the body and the fundus, or by forcing open the resisting os uteri by mechanical means, will oftentimes increase the evil and convert an otherwise safe labor into a difficult one.

When labor has been advancing well for several hours and the dilation of the os uteri has not been satisfactory, it is an evidence that the natural processes have from some cause or other been interrupted.

When after some deliberation I discover that the condition is a want of correspondence of axis caused by an obliquity of the uterus and I succeed in procuring a proper relation between the axes of the uterus and the pelvis, a great sense of relief is experienced as labor advances more rapidly and with less pain.

In speaking of obliquities of the uterus I am convinced that I have often shortened labor and ameliorated pain by such simple procedures as changing the position of the parturient woman, usually laying her upon the left side (because we meet with right obliquity more frequently), or placing her in the knee-chest position. Furthermore, by hooking a finger, during the absence of pain, into the dilated or easily dilatable os, and gently drawing it towards the symphysis pubis, retaining it there until a pain ensues. It often becomes necessary to repeat this procedure, especially if the contracting force offers much resistance, to keep it at the symphysis. This of course should always be done during the relaxing period. In this manner we alter-

nately retract and relax until we establish a correspondence between the axes of the fundus, the os uteri and of the pelvis.

There are cases of extreme obliquity when it is often difficult to reach the os uteri by the ordinary mode of examination. In such cases it is my custom to introduce the hand, well lubricated, into the vagina so that the palm may be next to the distended uterus. With a finger search is made for the os uteri in the neighborhood of the promontory of the sacrum. When the os has been found it is hooked upon the end of the finger and drawn towards the center of the inferior strait. This manipulation permits the hand then to be withdrawn. The finger, however, is retained hooked in the os to steady the uterus until the proper direction of the forces and the axis of the uterus are in correspondence. I occasionally have found reason for censure because I failed to take advantage of an opportunity and permitted nature to struggle unaided through a difficulty, when by timely and judicious assistance unnecessary delay could have been avoided. I have frequently found, for instance, when the head occupies the inferior strait, that a goodly portion of the anterior lip of the uterus has been pushed ahead and has become caught between the pubic bone and the head. This portion of the neck of the uterus is obliged to sustain the whole force of the uterine efforts in consequence of which it becomes not only severely stretched, but it very effectually opposes the advancement of the presenting part and gives rise to much unnecessary delay, as well as very much augmenting the suffering of the patient. Now such a condition can and should be corrected.

The proper time to act is when the head occupies the inferior strait, when the pains are active and when the os is sufficiently dilated to permit the head to pass. In the absence of pain the prolapsed edge of the anterior lip is seized between index finger and thumb and drawn towards the symphysis pubis. It is maintained there until a pain comes on. At this moment the finger, or the end of two or three fingers, press against the edge of the uterine lip, in a manner so as to push it upward between the head of the child and the pubes. Should we succeed in carrying the prolapsed portion of the uterus above the advancing head, that is, so far as to permit the parietal protuberances to pass beneath or below the circle of the os uteri, the prolapsed portion of the neck of the uterus will suddenly withdraw itself from the finger and rise within the pelvis; the vertex will apply itself beneath the arch of the pubes and the labor terminate almost immediately.

I have seen severe traumatism as a result of just such a condition.

one of the severest being the almost complete tearing away of the oedematous anterior portion of the lip.

I feel that such an injury by the judicious interposition of skill could be prevented. It is of the greatest importance that traumatism to the soft parts be avoided, and when by violent contractions of the uterine body a condition inviting severe traumatism to the anterior lip is established, the application of the forceps, whereby the head can be steadied and held in check till the oedematous lip has been pushed up and back over the child's head by an assistant, must be considered as our best plan of procedure to overcome this accident.

In connection with rigidity of the os I wish to relate an instance where the obstinacy which the neck of the uterus offered to the passage of the head was of purely a mechanical nature. This labor was advancing well and was natural in its general relations with the exception that a trachelorrhaphy had been performed some five years prior to this pregnancy. I noticed after some hours of labor that the os was dilating unevenly, that about one-third of the circle on the left side showed no inclination to yield. It became apparent after some hours of waiting that the condition was retarding the progress of labor and was causing the woman much suffering. I decided to incise that part of the cervix, reasoning that the firm cicatricial condition was the cause for this delay. My probe-pointed bistoury struck a piece of metal which proved to be a silver wire suture. It was placed very high and was deeply embedded. Its removal permitted labor to terminate rapidly. Although this happened during my early years in practice I have not yet forgiven myself for not discovering this obstruction earlier.

I have at times almost lost faith in the words of my dear Professor when he said "The shoulders are now to deliver themselves which they do in the following manner, etc., and when the shoulders are delivered the rest of the body follows immediately." How often have I wished for those shoulders to be delivered. In truth the shoulders have given me very much trouble and I can without effort recall a number of cases where my inability to promptly deliver the shoulders almost caused the death of the child. I personally know of several cases where death was caused by the shoulders being caught, if I am permitted to use this expression, when delivery could not be effected in time to save the child.

The difficulty encountered here is not so much the size of the shoulders as it is the rigidity of the soft parts (perineum) together with the exhaustion induced from the force or the long continuance of labor. Such an exhaustion may not be a mere loss of strength in the



muscular system, as is evidenced by the forceful contractions of the muscles of the perineum, but it may be a state of inertia of the uterus itself. Both these conditions may combine, or they may exist separately and independently. When combined they may be accompanied with syncope, a condition that has given me great concern whenever I have met with it.

I am convinced that the administration of chloroform sufficient to overcome the spasm of the perineal muscles as soon as the head enters the inferior strait, will be of the greatest assistance in effecting a delivery of the shoulders with the least possible danger of asphyxiating the child. A few experiences with a serious aspect have convinced me of the advisability to administer chloroform only at this stage of a normal labor. We cannot always tell to what extent the uterine powers may diminish as soon as the head is born, nor can we judge the amount of resistance a rigid perineum may offer at this critical period.

Another chapter in my obstetrical experience that has often given me concern was the question when to turn and when not to turn. There are head presentations where version is indicated as offering better chances for the happy termination of labor, and there are presentations again that make turning imperative as possibly offering an only chance for a safe delivery. Some operators are more skilled than others in determining the specific character of a presentation, but we all must agree in acknowledging how difficult it is to correctly diagnose some presentations before the rupture of the membranes. It is here that valuable time must be lost and I cannot help but admit that at times my inability to make out the correct position has caused me much uneasiness. In head presentations where the occiput is posterior, and in face presentations where the chin is posterior to the transverse diameter of the superior strait I should invariably feel strongly inclined to turn, unless I succeeded in transforming the existing position into a more favorable one without changing the presentation. But even with such an encouraging procedure at our command, we must not consider the act of version as entirely free from danger. During the process of a version delivery the child is exposed to a constant risk. There may be compression of the umbilical cord. The compression of head and chest may have its serious consequences, while the severe extension of the neck may do mischief to the spinal cord.

When necessity obliges me to resort to version I endeavor to adhere to the principles laid down for this act as closely as possible. I never overlook an opportunity however that in my judgment might facilitate my work. Before using the rubber glove my hand would



become much cramped and fatigued by provoking untimely contractions of the uterus, compelling the withdrawal of the hand that it could recover. With the use of the rubber glove I find that this annoyance has become much less.

I usually satisfy myself with any part of a lower extremity, be it knee, leg or foot, and do not make a prolonged search for simply a foot. In bringing down the foot or the feet it is well to make certain that the toes pass over the face of the child. During the act of turning, the uterine contraction must be respected and no attempt at manipulation be made. After the feet are delivered, every advantage of the pain, if any exist, is taken to facilitate delivery.

I have experienced difficulty in several cases in bringing down the breech when the feet are in the vagina. This condition although not quite clear to me, was undoubtedly due to the arrest of the head at the superior strait with an unfavorable relationship of the diameters. By external manipulation of the head and drawing downward of the body this difficulty was overcome. Sometimes I would find the progress of labor interrupted by the axillæ appearing at the vulva. Considerable manipulation is often necessary to extricate the arms. The axilla next to the sacrum should be delivered first. Great care is to be exercised lest a fracture or a dislocation about the shoulder result from too forcible a manipulation. By passing one or two fingers upon the point of the shoulder, exerting firm pressure downward, we trace the arm to the elbow and endeavor to bend it by pressing it on its internal surface opposite the joint. The arm is then brought forward and downward toward the face of the child, when it can be readily brought into the cavity of the vagina. I have invariably found it more difficult to deliver the second arm, especially if the head and arms are both engaged in the small diameter of the superior strait, or when the arm has passed behind the neck. By manipulating the shoulder in the direction the face of the child looks, this difficulty may be overcome more readily than by forcible measures.

In delivering the head I can most emphatically say that that has at no time been an easy matter. It is absolutely necessary that the diameter of the head and the pelvis correspond at the superior strait. If they do not correspond they must be made to. At the inferior strait the most favorite position for the face is in the hollow of the sacrum. It gives us the great diameter of the head in correspondence to that of the lower strait. The head in this situation is almost always without the uterus. We cannot expect, therefore, any aid at this time from the contractions of this organ. If the woman is not under an anesthetic she must now be solicited to employ her voluntary pow-

ers of bearing down, that too much force need not be employed by acting on the body of the child. Appreciating the exertions of the mother, we draw the body of the child nearly upward, pressing with two or three fingers upon the occipital bone, carrying it downward so as to disengage it from behind the pubes. An advantage is sometimes gained by depressing the chin but never by acting upon it, the object in depressing the chin being to prevent it hitching on the folds of the vagina, thus creating additional delay and difficulty.

In conclusion I may say that I have often experienced great discomfort in endeavoring to pursue a firm, candid and feeling conduct throughout the whole scene in the face of the many questions and entreaties from anxious relatives, whose infliction is often so trying to the physician.

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## AN ACUTE FEVER IN CHILDHOOD, USUALLY INCORRECTLY DIAGNOSTICATED.

BY JOHN ZAHORSKY, M. D.

It is often advantageous to call attention to a disease by laying stress on the most prominent symptom. In general, the acute fever, in childhood signifies some infection and it is the duty of the physician to discover the anatomical site and determine the character of the infection. We have learned to examine the throat and the chest, to inquire into the condition of the gastroenteric tract, and examine for cerebral symptoms. We always bear in mind a general infection as typhoid and too frequently we assume the presence of the plasmodia in the blood. In the case of a fleeting fever the term febricula has justly been discarded. In the more prolonged fevers we watch for endocarditis, but sometimes diagnose pneumonia although there are no physical signs present. We even go so far as to give the name cryptogenic septicemia when a severe fever gives no local or general signs of infection and a polymorphonuclear leukocytosis indicates some septic process. But we have painfully overlooked the urinary tract.

There is an acute infection of the urinary tract, which occurs especially in girls, which gives rise to an acute fever of varying duration and intensity, which is rather common and which unfortunately is usually overlooked by the practitioner. How common the disease exists can be appreciated when I state that in the last ten months I have seen nine cases. Four of these cases I have previously reported (*St. Louis Courier of Medicine*, May, 1906.) I herewith give briefly the history of the other five cases:

CASE V.—Baby P., female, age 11 months, was the second child in the family and had been fed on the bottle since she was two weeks old. She had several attacks of indigestion, could not digest cows' milk and was, consequently, fed mostly on condensed milk to which a little cream had been added. I saw the baby on August 26, 1906, and the mother stated that she had just returned from a country town, where she had spent several weeks, and where typhoid was very prevalent. Her baby had had fever for several days and she feared it was taking typhoid fever.

Examination revealed a well nourished infant rather pale, however. The rectal temperature was 103.2 degrees F., Respiration 36. On physical examination some evidences of mild rachitis were discovered. Nothing abnormal was found in the nose, throat or lungs. The heart gave no evidence of inflammation within or without. The infant had vomited several times, but there was no diarrhea then. The mother stated, however, that two days before the onset of the fever some looseness of the movements had been present. The spleen was not enlarged. The mother had observed no change in the frequency of urinating.

At first it seemed that the disease might be typhoid fever and for several days I examined carefully for rosespots. On the eighth day a widal test proved negative. The fever was constant and rose to 105.2 on the day following my visit. (see temperature curve). I did not obtain any urine until two days later, when the following was found.

Urine, acid; cloudy in appearance and pale; specific gravity 1.012. A strong reaction of albumin was present. Microscopically, pus cells were very numerous. Nothing definitely could be made out as to the character of the epithelial cells present. On account of the rather large percentage of albumin a diagnosis of pyelitis was made.

This fever resembled the course of typhoid very much. A blood examination on the 7th day of the disease showed a polymorphonuclear leukocytosis present.

The course of the disease is best shown by the fever curve. For the first few days quinin was given without effect on the temperature. Baths were given for the high fever, also guaiacol applied to the abdomen. At no time did the baby show any dangerous depression. On the fifth day the administration of hexamethylenamine was commenced, but on account of the irritable condition of the stomach not much could be administered. Albumen water had to be substituted for the condensed milk for several days.

Whey was also given. Hexamethylenamine was not tolerated by the stomach and had to be given in very small doses.

In this case, judging from the quantity of albumin the pelvis of the kidney was evidently implicated.

The course of this disease very much resembled typhoid fever, and substantiates the report of Hartwig (*Berlin. Klin. Woch.* 1903) who reported three cases which he declared in their clinical aspects resembled typhoid fever.

CASE VI—H. T., girl, aged 7 years, had always been a healthy girl. She had had measles and whooping cough. The parents were both healthy and a sister two years older had a splendid physique. Our patient had been complaining for a month of indefinite symptoms. She lost in weight, and complained of being tired. On September 3rd, 1906, she developed fever and complained of pain in right side. During the week she had "wet the bed" three times successively without apparent cause.

Physical examination revealed the presence of fever (temperature 102 degrees) which rose to 104 degrees during the night. There was considerable prostration. The mother insisted that the child must have malaria, to which diagnosis I had to give a reluctant consent, after a careful physical examination with negative findings. I warned the mother however, of the possibility of pyelitis or cystitis being present and asked for a sample of urine. The patient complained of pain in the right hypochondriac region and some tenderness or pressure seemed to be present over the lumbar region of that side.

Blood examination revealed a moderate leukocytosis and a few black granules were found in the leukocytes. No plasmodia were found. The urine obtained on the following day was pale in color and slightly cloudy. A trace of albumin was found and microscopically numerous pus cells were readily found. The epithelial cells were mostly flat pavement and ovoid cells. No conical or long tailed cells were discovered. Apparently a cystitis was present and yet the tenderness over the right kidney seemed to point to an involvement of the pelvis.

A few doses of quinine were given the first day, then hexamethylenamine was substituted. On the third day of the disease the temperature remained about 101 degrees all day. On the fifth day the temperature was normal and remained so. One month later the urine was again examined; specific gravity, 1018, acid; trace of albumin; still cloudy in appearance; microscopically some pus cells, also conical and cubical cells. In this case the diagnosis

of malaria seemed certain until a blood and urinary analysis was made. In the following case I wavered in the diagnosis of malaria or typhoid.

CASE VII.—M. B., aged 6 years, had been a very healthy child. In July, 1906, I was consulted; she had had fever off and on for a week. The mother stated that the fever was worse every other day.

Examination revealed no local infection anywhere in the respiratory or gastroenteric tracts. The patient complained of no pain anywhere. There were no gastroenteric symptoms. The temperature was 102 degrees on my first visit and rose to 103 degrees that afternoon. In spite of two or three doses of quinine the fever persisted, so that typhoid fever was suspected. The urine was not obtained until the seventh day of the fever as an accident happened with a bottle containing a specimen two days before. Repeated blood examinations were made but the plasmodia were not found. The Widal reaction was negative on its eighth day of the fever. Examination of the urine revealed the evidences of a cystitis or pyelitis. A small quantity of albumin and numerous pus cells were readily found.

Altogether the fever lasted three weeks although its intensity declined very much after 10 days. She was then sent North and remained on the shore of Lake Michigan without any great improvement in health. She did not quite regain her former vigor, but remained rather delicate in health. When she returned six weeks after recovery from the fever, the urine still contained a trace of albumin and some pus cells.

CASE VIII. The next case occurred in a girl baby 16 months, who when first seen gave a history of a previous indigestion for several days. When fever developed I was asked to see the infant. For two days I watched the case without making a positive diagnosis. On the third day some urine was obtained and the diagnosis of pyelitis or cystitis could easily be made. The fever disappeared in five days. Hexamethylenamine was the principal drug used in treatment.

CASE IX. A physician asked me to see his baby girl, 14 months old, who, he said, had been suffering from a mild fever for ten days for which he could discover no adequate cause. After examining the infant, I urged him to obtain some urine and examine it. He reported on the same evening that the urine contained albumin and pus. The recovery in general symptoms was prompt.

What should be learned from all this? That there is a very common acute fever of childhood especially girls depending on an infection of the urinary tract. Hence, a new rule must be emphasized:



In every case of acute or chronic fever, especially in girls, the cause of which is not obvious the urine should be examined. Furthermore, in every case of persistent malnutrition, especially in girls, the urine should be examined both chemically and microscopically.

All my cases were girls. Why this sex is so much more often attacked than boys suggests the possibility that the infection may take place through the urethra.

Although Escherich in 1894 called attention to this disease and his students have since written at various times, the disease has not attracted much attention until recent years. Escherich and Turney showed that the disease is comparatively frequent, that it occurs almost exclusively in girls and that the colon bacillus is the usual infective agent. Not much has been added to these conclusions since the work of Escherich although Finkelstein attempted to show a relationship to other diseases in his series of cases. There can be no doubt that the disease can occur as a primary affection not dependent on some previous gastroenteric infection; in fact, judging from my series of cases this is the rule.

A remarkable feature of these cases is the slight disturbance of the bladder. Often the mother observes an increased frequency of urinating but as often no such symptom is present. We must not depend on local or general symptoms to exclude the disease.

Another difficulty is to locate the site of the infectious process. It is often impossible to state whether the pelvis of the kidney or the bladder alone is implicated.

The object of this paper has been to emphasize these important clinical cases, which are usually erroneously diagnosticated as malaria, sepsis, grip, etc.

Cryptogenic septicemia becomes a much rarer disease when the urine is more frequently examined. Pneumonic fever is a term not infrequently given to a persistent fever when the infectious process is really in the urinary tract.

In closing it may be well to call attention to the excellent description of the disease by L. Langstein (*Handbuch f. Kinderheilkunde*, Pfandler und Schlossman), and the emphasis laid by him on its important clinical bearing. For a list of the bibliography see an article by Fromm (*Centralbl. f. Kinderheilkunde*, Oct., 1904).



## TREATMENT OF GOITER.

BY H. N. CHAPMAN, M. D.,

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The question of the treatment of goiter—simple and exophthalmic, is one that frequently presents itself to the general practitioner. Among the recommendations for its treatment physical means are given a place. I desire to detail some cases in which electricity and mechanical vibration have been used, and the results obtained.

Miss L., 35 years, single, had a typical case of exophthalmic goiter, both sides being swollen. The four cardinal symptoms were present—tremor, exophthalmos, tachycardia and enlargement of the gland. Menstrual function normal and lasts 3 to 5 days; bowels and appetite fair; temperature normal; pulse, sitting, 132; heart sounds clear, regular and of fair force—no murmurs.

Her neck began to swell 4 months ago; the neck measurement formerly was 12.5, now it is 14.5 over the goiter. I prescribed soluble iodine, 5 minims t.i.d. and iodine and lanolin rubbed into the growth twice a day. In 5 days there was a diminution of half an inch in the neck measurement, and 3 days later the neck measured only 13.7 inches, looks better, exophthalmos not so pronounced, pulse 108, eats and sleeps better.

August 14.—Fifteen days after commencing treatment the neck measured 13.5 inches, a diminution of 1 inch; pulse 107; still much tremor. I gave mechanical vibration to the cervical spine, neck and growth, and continued the medication.

August 25.—Pulse 96; neck measures 13.5 inches.

September 2.—An attack of grip supervened, which increased all the symptoms. I began high frequency current from the Oudin resonator and induction machine over the growth.

In this attack tremor became very severe, flushings of the face, gastrointestinal crises and diarrhea; tachycardia became more marked, and the neck again increased to 14.5 inches.

September 8.—The neck now measured 13.5 inches, the tremor is better, face flushed, and staring eyes painfully evident, pulse 115.

September 11.—Neck 14 inches, pulse 96, tremor marked and present in all voluntary muscles. Now, besides physical treatment (high frequency currents) I gave thyroidectin, 5 grains after each meal, for 16 weeks but with absolutely no evidence of result. At this time the patient passed from under my observation, no better than she came.

Miss F., aged 24 years, noticed a swelling of the neck about a year ago, more to the right side, soft to the touch but not cystic. The neck measures 14.5 inches; some exophthalmos; no tachycardia or tremor. Diagnosed as a case of simple goiter. Treatment designed to reduce swelling and this only for esthetic reasons. This treatment was soluble iodine, 5 minims, t.i.d. High frequency treatment with vasogen iodine, 6 per cent., over swelling.

This treatment was kept up for several weeks with the effect of reducing the neck a half inch. The patient discontinued treatment, effects were not being produced quickly enough.

Miss D. W., aged 32 years, presented herself to me with a distinct swelling of the right side of the gland, of 1 month's standing; much nervousness (patient of a nervous temperament), easily excited pulse, no exophthalmos. Induction electric treatment consisting of Morton wave current to the growth and to the cervical and dorsal spine, kept up for a month, 3 times a week and at longer intervals for 6 months, resulted in complete disappearance of the growth and all the symptoms, and the patient continues well after 3 years.

Miss R. T., aged 24 years, single, reported to me August 8, 1905. Left sided enlargement of the thyroid rises abruptly from the surrounding tissues and is movable under the skin, firm and hard, of the size of a hen's egg. The neck measures 13 inches over the growth. The patient is a small woman, weight varying from 95 to 105 pounds. No exophthalmos, but sensation of enophthalmos at times very marked, that is, the patient complains of sensations as though her eyes were being pulled back into the head. There is no actual exophthalmos. Little muscular tremor; no continuous tachycardia, but attacks at times very severe; pulse at times reaching 200 with sensation of smothering; she complains a great deal of bearing down in the pelvis; no headache or backache. She was curetted several years ago for painful menstruation without relief, but was rather worse; the pain at menstrual epoch is very severe, the flow is normal and last from 3 to 5 days; exertion causes such bearing down as can not be borne and the patient is compelled to desist.

The treatment consisted of soluble iodine, 5 minims, t.i.d., and vibratory applications to the cervical spine, neck and growth.

August 19.—No change in the symptoms; the neck measures a half inch less. This treatment was continued through the autumn and winter with little change in her condition.

In the early part of April the patient called at my office and complained of a sense of constriction in the neck and general bad feel-

ing, no appetite, and distress after eating. At this time I began Morton wave current to the hypogastrum to tolerance and vasogen iodine, 6 per cent., to the growth, and high frequency with graphite electrode 3 times a week.

May 1.—The patient reports that she feels absolutely well symptomatically, though the neck still measures 12.5 inches. She also reports menstruation normal and free from pain; says tachycardia has ceased; appetite good and is unconscious of digestion. She comes for treatment at long intervals—every 2 weeks.

In the early part of June she had a severe attack of tachycardia and a gastroenteric crisis, from which she recovered in a few days. At the suggestion of a medical friend I used the x-ray to dermatitis but with much less benefit than the former treatment; in fact, with no benefit whatever.

In the latter part of July she had another severe attack of tachycardia and a gastric crisis. In this attack the pulse went to 200 per minute. The question of operation was broached but the patient fought it but finally consented to see a surgeon who, when called on, was found just going on his vacation. Since then the patient has been taking treatment on the induction machine, Morton wave current to the hypogastrum, and the cervical and dorsal spine, with practical subsidence of all symptoms and a remarkable sense of well being. With 2 treatments per week she remains in excellent condition, explained by the well-known action of the electric treatment as given in stimulating the eliminating organs—skin, kidneys and bowels, and the lungs. Without doubt, if the excessive secretion theory be correct, most of the excess is hurried by this means through the system and thrown out.

Two of these patients, the first and fourth, were given thyreoidectin, each patient receiving 1,000 grains, at the rate of 15 to 30 grains per day, but with absolutely no effect; after taking this much administration was discontinued. It is possible these doses were not large enough.

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## THE THERAPEUTICS OF THE NATIONAL FORMULARY.

Practical medicine continues to foster polypharmacy. Although the theorists may find a dozen reasons why only single drugs should be prescribed, the practitioner who uses a patent drug with several adjuvants and two or more correctives has an advantage at the bed side. Hence, pharmacopoeal preparations do not entirely meet the demand of the practicing physician. Many physicians become skilled in writing complex extemporaneous prescriptions; some never acquire this art. Therefore a compendium of mixtures and solutions, free from chemical and pharmaceutical incompatibility, is a necessity to this latter class, and to the former it is at least a great convenience. It is not wise to depend alone upon information given by the trade chemists; consequently, the efforts made by prominent physicians and pharmacists to give the most useful compounds an official character and render their strength uniform should be encouraged by every right-thinking physician. Every practitioner, therefore, should be familiar with the names and the approximate composition of the elegant preparations compiled in that standard work called the National Formulary.

We regard it wise to assist in making the general practitioner familiar with this book. Then, every practitioner must constantly try to increase his resources; he does not do well who is satisfied with the *materia medica* which he learned 10 to 20 years ago. We would not advocate the exclusive use of the drug preparations of this book, but as an addition to the armamentarium of the general practitioner they are invaluable.

Since diseases of the respiratory organs are most common at present, we will first take up this group of diseases.

## CORYZA.

The causation of this disease varies; it may be due to the inhalation of very cold air and to the disturbance resulting from exposure. The most common cases, as all "colds," are of bacterial origin, and therefore, antiseptics locally applied are valuable. For mild cases *pulvis catarrhalis*, N. F. may be snuffed up the nose. This is soothing and antiseptic. Its effect may be enhanced by the addition of thymol iodid. U. S. P.

R.

Thymol iodid .....	gr. v.
<i>Pulv. catarrhalis</i> (N. F.) .....	dr. ii.
M. sig. use a small pinch as snuff several times a day.	

Sometimes an oily solution is more valuable especially in children in whom the insufflation of a powder is not easy.

R.

Thymol iodid ..... gr. i.  
 Camphomenthol N. F. .... m. ii.  
 Petrolati liquid ..... dr. i.

M. One or two drops to be instilled into the nose several times a day.

For the headache or excessive secretion some internal medicament may be employed with advantage. There can be no doubt that an opium preparation brings good results, although for obvious reasons it can not always be prescribed. Cinchona preparations are very valuable at times. A combination of this with camphor and belladonna forms a popular remedy usually furnished in tablet form. (Coryza tablets). We sometimes prescribe:

R.

Antipyrini ..... dr. i.  
 Syrup quidinae (N. F.) ..... oz. ii.

M. sig. Teaspoonful every 3 hours. A good preparation containing all the active alkaloids is the cinchona elixir and may be used in various combinations. It contains about two grains of the cinchona alkaloids in one fluid ounce, while the syrup of quinine contains two grains to each fluid dram.

#### TONSILLITIS.

There are many forms of the disease depending on a variety of bacterial infections. Ultimately, the bacterial and not the clinical forms will be diagnosticated; some clinicians attempt to do this even at present. The common variety known under the name of follicular tonsillitis depends on some non virulent coccus and heals promptly under any form of treatment. The staphylococcus infection sometimes produces a very severe and persistent inflammation of the tonsil. Then there is the severe tonsillar infection depending on the streptococcus erysipclatis. It is therefore exceedingly difficult to lay down general rules for treatment.

We usually prefer a sialogogue and general stimulant, such as is found in pilocarpus. The alkaloid is really preferable, but jaborandi may be used. The salicylates also have a mental reputation in these infections. A combination might be suggested.

R.

Elixir pilocarpi (N. F.) .....  
 Elixir acid salicylici (N. F.) ..... aa oz. i.

M. sig. Teaspoonful every 3 hours.



It is not always wise to apply antiseptics to the throat; especially are vigorous applications to be condemned since the tonsils are injured. In cases in which the diagnosis is doubtful local applications should be interdicted, since this procedure changes the appearance of the pseudo-membrane. A very grateful gargle, or, slightly diluted, solution to be used by the atomizer is the liquor antisepticus alkalinus (N. F.). The liquor antisepticus of the pharmacopoea can also be used. Another germicidal solution of the National formula is the liquor anti-germinarius which is probably a more powerful bactericide than the other solutions mentioned. The 80 per cent. alcohol in this medication is powerfully antiseptic even without the  $1\frac{1}{2}$  per cent. of thymol and the six per cent. oil of eucalyptus and oil of lavender. When used for a mouth wash or gargarysma it must be diluted.

## QUINSY.

Peritonsillar abscess is most commonly produced by some pyogenic microorganisms. No doubt some forms of the disease are due to nonpyogenic or nonvirulent germs and the disease is easily aborted. As a rule the primary object of treatment in quinsy is the prevention of suppuration, since the pain and discomfort induced by an abscess is generally very severe. The local use of heat and cold often bring temporary relief, but the question is often asked what to use in order to abort the inflammation. Manifestly this can not always be done. An old remedy which occasionally seems to do well is guaiacum. It is conveniently prescribed in the form of glyceritum guaiaci (N. F.) in doses of one-half to one teaspoonful every 3 or 4 hours. Often some preparation of sulphur as calcium sulphid may be given internally. Sulphuric acid acts very well also at times. The dilute acid should be given in 15 to 20 drop doses every 4 hours. The old Haller's acid elixir can be used:

R.

Mist. sulphuric acidæ (N. F.) .....dr. iv.  
 Aquæ menth pip .....oz. iii.

Sig. Teaspoonful well diluted every 4 hours. Haller's acid elixir contains 25 per cent. of the acid in alcohol.

For pain or sleeplessness some anodyne and hypnotic is necessary. We can prescribe:

R.

Misturæ chlorali et potassii bromidi comp (N. F.) ....oz. ii.  
 Sig. Teaspoonful in water for sleep.



Or even a morphin solution may be taken; as

R.

Syrup morphin sulphat (N. F.).....oz. i.

Sig. Teaspoonful every 2 hours until relieved. This preparation contains  $\frac{1}{8}$  grain of morphine in each fluid dram.

#### THE "COMMON COLD."

The common "cold" usually consists of a rhinitis, pharyngitis, laryngitis or bronchitis or a combination of these conditions. It is becoming generally recognized that "colds" are due to bacterial invasion and not to atmospheric influences, although an exposure, no doubt, acts as a predisposing cause. What can we do, then, to increase the resistance of the body besides warmth and rest?

Quinine and salicylic acid often seem to act favorably, although it is not known how these drugs act. An opiate sometimes assists in curing. Camphor has a marked effect in many cases. The coal tar antipyretics are by no means to be despised in all cases. The pills of opium and camphor (N. F.) are very good means to combat a distressing "cold." One given at bed time may dispel all symptoms by morning. The elixir of pilocarpus, (N. F.) is certainly an active cellular stimulant and is especially valuable in faucial inflammations. As a mild diuretic the elixir of potassium acetate and juniper (N. F.) can be given with benefit.

A good cathartic is often used to break up a "cold." The U. S. pharmacopoeia and the National Formulary offer as a plentiful supply of these medicaments. One to three teaspoonfuls of the elixir catharticum compositum (N. F.) taken at bed time should fulfill all requirements, although a compound cathartic pill is probably preferable as it contains calomel.

#### LARYNGITIS.

Laryngitis in children gives us much concern on account of the tendency to induce spasmodic croup. Sometimes the inflammation is so severe as to cause a persistent stenosis and is shown by extreme restlessness, croupy cough and laryngeal stridor. The disease is further aggravated by the accumulation of viscid mucous in the ventricles or below the vocal bands. Hence the indications are to allay nervous spasm, to check coughing which only irritates the inflamed cords, and to promote expectoration.

The iodine preparations have a great reputation for acting favorably on the mucous membrane and increasing expectoration. The following prescriptions will be found useful. The doses are for a child about four years of age.

R.

Tr. veratri (U. S. P.).....m. xv.  
 Syrup calcii iodidi (N. F.).....dr. iss.  
 Aquae q. s. ad.....oz. ii.  
 M. sig. Teaspoonful every hour until relieved.

R.

Antipyreni .....gr. xl.  
 Tr. veratri, U. S. P.....m. xv.  
 Elixir sodii bromidi (N. F.).....oz. ss  
 Syrup papaveris (N. F.) .....dr. i.  
 Syrup tolutani q. s. ad.....oz. ii.  
 M. Sig. Teaspoonful every three hours.

This mixture is very effective in preventing the paroxysms of laryngospasms.

Inhalations are often useful. The compound tincture of benzoin is deservedly popular. Evaporation of liquor creolis compositus (U. S. P.) acts efficiently at times.

The practicing physician will not condemn entirely external applications. In diseases of the throat and chest they are often serviceable. Hot fomentations around the neck seem to relieve the internal congestion. In feverish conditions cold compresses are preferable. The National Formulary contains several prescriptions of preparations which may be used with benefit. Linimenti saponato-camphoratum is an old preparation but a very good external application. It is not often used, however, while the linimentum camphorae (U. S. P.) is very popular. Linimentum terebinthinae aceticum (N. F.) can also be used in older children.

## BRONCHITIS.

The National Formulary is exceedingly liberal in offering various substitutes for extemporaneous prescriptions for cough. It is astonishing what wonderful concoctions are sometimes given for a cough. The most popular cough medicine is the compound syrup of white pine (Syrupus Pini Strobi Compositus, N. F.), which contains twelve different ingredients. Its most active constituent is morphine. Each fluid dram contains 1-32 grain of morphine sulphate. White pine bark, wild cherry bark, spikenail root, balm of Gilead buds, sanguinaria root and sassafras root form other important constituents; chloroform gives it a sweetish taste.

The syrup is well taken and usually acts very well in a distressing cough from bronchitis. Potas. iodide or ammonium chloride may be added to this compound if desired. The same prescription can

be used in the cough of phthisis and pneumonia. It will give relief in the violent paroxysms of coughing in bronchial asthma. It should not be given to infants.

A more simple preparation is the *syrupus pectoralis*, which contains morphine, oil of sassafras and acaciae. *Syrup morphinae compositus* is a fine cough syrup and contains, besides the morphine and sassafras, ipecac, senega and rhubarb, the last named drug probably overcomes the constipation induced by the morphine. Another similar compound is *syrupus actaeae compositus*, which contains ciuicifugae, licorice, senega, ipecac and wild cherry, but no opium. This article is to be preferred in most cases of subacute and chronic bronchitis when the cough is not excessive.

We are not sure of the object of introducing the *syrupus asari compositus*, an article which we are in doubt when to use. Besides the Canada snake-root it contains some wine of ipecac. It may be of service in children with a nervous cough or in whooping cough.

In the irritative cough of pneumonia or pleurisy *syrupus codeinae* (N. F.) may be prescribed in one-half dram doses. It contains  $\frac{1}{2}$  grain of codeine sulphate in each fluid dram. In children the *syrupus glycyrrhizae* (N. F.) may be safely employed in simple tracheitis or bronchitis, since its only active constituents are licorice and glycerin. Probably it can be used more effectively in combination:

R

Ammonii chlorid .....	gr. xxiv.
Syrupi glycyrrhizae (N. F.) .....	dr. iii
Syrup toluani q. s. ad.....	oz. ii
M. Sig. Teaspoonful every 2 hours for a child of 5 years.	

As licorice is laxative this syrup in full doses may be added to various cough mixtures which contain opium, thereby the constipating effect is obviated.

The *syrupus ipecacuanha et opii* (N. F.) (syrup of Dovers powder) is a very effective preparation and may be used in cough mixtures. In ordinary bronchitis it may form an ingredient of curative prescriptions. This article is also very beneficial in pertussis, when the paroxysms are exhausting. Each fluid dram represents 5 grains of Dover's powder.

Another article which may be used to form a constituent of cough medicines is the *syrupus sanguinariae* (N. F.), the average dose of which is 30 minims. Each fluid dram represents about 13 grains of blood root.

One of the old drugs which has been found useful in the later

stages of bronchitis is tar. The National Formulary recommends several mixtures containing tar. The first to be mentioned is the elixir picis compositum (dose: 1 fluid drachm). Besides wine of tar it contains the syrup of wild cherry and the syrup of tolu. It should be remembered that this preparation also contains about 1-50 grain of morphine sulphate to each dram.

And this leads us to write a few words about the vinum picis (N. F.) which contains ten per cent. of tar in the stronger white wine. It can readily be used in a variety of mixtures in which tar is desirable. As an example:

R

Vini picis (N. F.) .....	dr. ss
Glycerin .....	dr. ss
Syrupi glycyrrhizae (N. F.) .....	dr. ss
Syrup tolutani q. s. ad.....	oz. ii
M. Sig. Teaspoonful every 3 hours in obstinate bronchitis.	

A similar mixture is glyceritum picis liquidæ which contains about 6 per cent of tar.

The mistura olii picis contains about 6 per cent. of oil of tar: also peppermint and chloroform.

In recent years terpin hydrate has assumed a prominent position in the treatment of subacute and chronic bronchitis and other bronchopulmonary diseases. Several formulæ are given by the N. F. to meet this demand. Elixir terpini hydrastis contains 1 grain to each fluid drachm. Then we have the elixir terpini hydrastis cum codeina and the elixir terpini hydrastis cum heronin, preparations which are extensively used.

Even this does not exhaust the preparations of the National Formulary which may be used in bronchitis. Speceas pectoralis may be recommended in certain chronic cases when it is necessary for something harmless to be taken. It contains althaeda, colts-foot leaves, licorice, anise, mullein flowers and orris root. A 5 per cent. infusion of this species may be given almost *ad libitum*. Then balsamum traumaticum, probably a good antiseptic when used externally, is also an excellent preparation to be given internally in doses of 30 minims. As it is an alcoholic solution it must be diluted, preferably with milk.

In protracted forms of bronchitis the elixir eucalypti may be prescribed especially when combined with hydrastis.

R.

Fluid extracti hydrastis.....dr. iii

Elixir eucalypti N. F.....oz. iii

M. Sig. Teaspoonful every 4 hours.

The elixir grindeliae may also be employed with advantage in bronchial asthma and chronic bronchitis.

R.

Potas iodidi .....dr. i

Elixir grindeliae (N. F.).....oz. iii

M. Sig. Teaspoonful several times a day.

There are some practitioners who get good results from petroleum even if a pharmacologist has shown that it is not absorbed. The emulsum petrolei (N. F.) contains 5 per cent of white petrolatum. Turpentine can be prescribed in the emulsion olei terebinthinae fortior; 1-3 teaspoonful in milk.

In short, the National Formulary gives all that the most fastidious physician may desire in the way of medicaments for coughs and colds.

J. Z.

## EDITORIAL COMMENT

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### GASTRIC PHYSIOLOGY.

The Medical Record, editorially, gives a summary of some experimental work on gastric digestion in Berlin and published as a "Festschrift" at the opening of the new pathological institute. Some of the experiments were made on dogs following the operations of Pawlow.

In one of these, as is well known, a gastrostomy is done and later the esophagus is divided in the neck and the end communicating with the stomach is closed while that leading from the mouth is sutured to the skin. Such dogs must be fed through the gastric fistula, as food taken into the mouth passes out again through the opening in the neck. The other operation consists in the formation of a gastric diverticulum, or lesser stomach, which is completely shut off from the remainder of the organ and is provided with a fistula leading to the surface. Food swallowed enters the main cavity of the stomach, and the secretory activities of this portion of the organ are reproduced in the lesser stomach, from which gastric juice may be obtained for analysis entirely uncontaminated. The reflex secretion obtained from animals of the former type represents the activity of the entire gastric mucosa, but is the result of only a fraction of the normal physiological stimuli, since the food never comes in contact with either the gastric or intestinal walls. Animals of the second group produce juice formed in response to normal stimuli, but not typical of the entire stomach, since it is manufactured only by a portion of the fundus. The results to be described were obtained from the study of such experiment dogs, and also comprise what, according to Bickel, are the first observations made on an adult human being presenting conditions similar to those occurring in these laboratory animals. This person was a girl of twenty-three years who eight years previously had acquired an impermeable stricture of the esophagus in consequence of poisoning by lye. After having been nourished for some years through a gastric fistula, the esophagus was divided in the neck, the lower end buried, and the upper end brought to the skin surface. By connecting this opening with that in the stomach by a rubber tube the patient, who had almost forgotten how to chew and swallow, was enabled to take her food by mouth.



On removing the rubber tube the same conditions existed as in the experiment dogs. Roeder and Soumerfeld have reported observations made in a similar case, but this patient was a child of twelve years.

Some of the most practical results need only be given. For example, it appears that, although the secretion of the specific substances of the gastric juice is an intermittent process, mucus is being constantly formed, and in consequence the mucosa of the resting stomach is alkaline to litmus. Silver nitrate and other caustics evoke an active secretion of mucus, but especially in this the case with the electrical current, which causes the production of mucus alone without any of the components of the true gastric juice. No matter how applied, percutaneously or endogastrically, whether strong or weak, galvanic or faradic, the electric current, according to these observers, is valueless as a stimulus to the digestive functions of the stomach, and the gastric electrotherapeutists will have to revise their doctrines. Furthermore, an abnormal secretion of mucus can be produced experimentally only by local stimulation of the mucosa, and only those regions directly irritated respond by forming mucus. That the secretion of gastric juice can be encouraged to a remarkable degree by stimulating the senses of taste or smell is well known, but it was found that it made no difference in the effect on the gastric mucosa whether the sensory impression was an agreeable one or not. For example, both quinine and asafetida were very repugnant to the young woman with the gastric fistula, yet their administration influenced the secretion favorably. The inhibiting effect on secretion of strong emotions could be strikingly demonstrated in the case of one of the experiment dogs that always flew into a violent rage when a cat was placed near his cage. Whenever this was done the flow of secretion was abruptly checked. Another observation of practical importance was that the same individual on different occasions responded differently to the stimulus of the same amounts of the same foods, on some days more juice being formed than in others. The more juice is secreted, the higher will appear to be the acidity of the stomach contents, which does not depend so much on the percentage strength in acid of the juice as on the amount of juice secreted. The unreliability of the results obtained from the analysis of a single test meal is evident, as the same stomach may on different days show great fluctuations in secretory activity. On the other hand, although the quantitative variations may be great, the gastric mucosa appears to be provided with a regulating apparatus which is very efficient in controlling the composition of the juice, for this

is subject to astonishingly slight changes. A highly interesting series of studies is devoted to the effects of the different foods, condiments, etc., on the gastric secretion, and remarkable variations in the effect of different substances are recorded. Fat and solutions of sugar and starch are no more stimulating than water, and even egg albumin has little value in this respect, while tea is directly inhibitory.

### MULTIPLE AND SUCCESSIVE CHANCERS.

The *Lancet-Clinic* discusses this subject as follows:

"At one period the view was held that the initial lesion of syphilis was for a considerable time strictly local, walled off as it were from the general economy, and it was this idea that led to the practice of excising chancers with the hope by this method of preventing the constitutional manifestations of the disease. This view has of late years gradually lost ground, and Robert W. Taylor in a recent article, combats it vigorously. He believes as do the majority of syphilographers, that from the very start the entire organism is infected. He significantly adds, in a sentence that conveys the crux of the entire article: 'It requires several weeks, however, before the intensity of the infection can be said to be complete.'

"Most of us have seen multiple typical Hunterian chancers in syphilis, and the appearance of a second chancre following the first after a short interval, while uncommon, cannot be considered rare. These successive chancers, according to Taylor, are due either to self-inoculation or to infection either from the original source of the disease or a fresh one. Naturally, as the period required for the complete syphilization of the body—that is, for the production of immunity—is not long, the time during which the second chancre may put in its appearance is correspondingly limited—as a rule not over 10 days. In other words, a consecutive chancre may develop in a syphilitic at a time when infection of the system has not proceeded along to the destructive characteristics of its forerunner, is not so prominent or so malignant in its appearance. Taylor aptly describes them by the word 'abortive.'

"The practical lesson is that multiple chancers or successive chancers are not so rare, but that they may occasionally be encountered even by those not engaged in specialized work; that they are of no special significance, not complicating the treatment in any way or unfavorably influencing the prognosis."

## A DEPLORABLE STATE OF AFFAIRS.

We reprint an editorial chat from the *Critic and Guide* in order to emphasize one point, and that is this—the honest physician is bound to tell the whole truth in regard to his experience. It will not do to be frightened by any prejudices:

“The editor has just had a chat with a young but rising genito-urinary surgeon. They were discussing a comparatively new proprietary product, which is giving very good results in specific urethritis. The editor’s friend was particularly enthusiastic, claiming that he knew of no other drug which reduced the acute symptoms, diminished the discharge and allayed the inflammation so rapidly. When the editor suggested to his friend that he report his experience in the medical press for the benefit of his confreres and suffering humanity, he replied in a most emphatic negative. The expletive was more expressive than elegant. ‘Do you suppose,’ he continued, ‘that I care to be looked upon with suspicion by our dear colleagues? That I care to be poked in the ribs by my friends, who, full of charity, would never get tired of asking me the question: ‘How much did you get for it?’ Do you suppose I care to jeopardize my standing in our medical society and my chances for the presidency? Not I. And besides, what journal would accept such an article? The *J. A. M. A.* surely would not. If the report were unfavorable, then it would. But not otherwise. I am not sure even that the *Critic and Guide* would. And I have my doubts about the *Medical Record* and the *New York Medical Journal*. In short only a third or fourth rate publication would accept a highly laudatory article on a proprietary remedy; And I do not care to contribute to such publications.’

“Our friend was right. Every word was true. And on parting from him we continued our meditations on the subject. A deplorable state of affairs, indeed. Honest, reputable physicians actually *afraid* to report their experiences, afraid of being accused of writing from interested motives. And if a physician should be bold enough to brave calumny from his enemies and coldness from his friends and report his findings, the pages of the high class journals would be closed to him. Is such a state of affairs conducive to the progress of therapeutics? How is the profession at large to learn of some new valuable drug or chemical if the proper avenues of publicity are closed? And why are the conditions in Europe so different? In Germany, Austria, etc., no physician, be he professor, docent, clinical assistant or private practitioner, has the slightest hesitancy in publishing his experience with a proprietary remedy. And not only are

such contributions gladly accepted by journals devoted entirely to therapeutists, journals like *Therapie der Gegenwart*, *Thera...Monat.*, etc., but such high class publications like the *Munch. Med. Woch.*, *Deutsche Med. Woch.* or *Berliner Klin. Woch.* very frequently contain reports on proprietary remedies. And the genus 'write up' is not unknown in Germany. And still reputable physicians are not afraid of becoming 'suspects.' Why is it? Is it possible that European medicine is inferior to ours? This can hardly be, for we still journey to it for instruction and inspiration. Are the European physicians less ethical than we are? Also hardly possible, for the European medical traditions are older than ours. The *esprit de corps* is stronger, and certainly they are supposed to know at least as well as we do what is ethical and what is not."

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### SYPHILIS AND PARESIS.

We were just congratulating the profession that the cause of paresis had been discovered in a general infection by a microbe that resembles the diphtheria bacillus. The older term metasyphilis as applied to this disease had been almost discontinued. Now, it seems that the syphilitic theory is again ahead, since Wasserman by elaborate biological experiments has demonstrated that the cerebrospinal fluid of persons suffering with general paralysis contains syphilitic antibodies. While the presence of these antibodies was not invariable, it was found in too many cases to doubt, that these patients had syphilis.

It may be argued however, that this shows nothing more than what was already known,—that the majority of paretics have had syphilis. By no means is the proof conclusive that the cerebral degenerative lesions in paresis are caused by the syphilitic virus. This disease may only act as a predisposing cause for the invasion of a bacillus which leads to the so called metasyphilitic lesions.

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### ANTHRACOSIS.

Not only the tubercle bacilli but anthracogenous particles are now supposed to be carried from the intestine to the lung. The coal-dust when inhaled is expectorated and swallowed. From the intestine the particles are absorbed and carried in the lymph stream into the venous circulation and thence to the lungs. Petit makes these claims and asserts that clinical and experimental observations support this view.

It is time for some one to bring forth proof that the pneumococ-

cus is absorbed from the intestinal canal and thence passes to the lung. Why not? There are clinical reasons to support this view; in fact, some practitioners declare that the intestinal tract needs antiseptics in pneumonia; that swallowing the sputum laden with pneumococci is liable to infect other parts of the lung. We will yet search for the pneumococcus in the milk and other foods.

But in all seriousness, is it possible to carry bacteria or small particles in the lung? We fear that Petit's claim in regard to anthracosis can not be accepted as yet.

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### SAHLI'S DESMOID REACTION.

Considerable interest has been given to the desmoid test suggested by Sahli. As to its technic we quote from an article by Hastings (*New York Med. Jour.*):

The desmoid test recently introduced by Sahli is one readily carried out and one which will give evidence of the presence or absence of the function of the gastric juice, notwithstanding the absence or the presence of hydrochloric acid in the gastric contents after a test meal. The patient is given with the midday meal a pill of methylene blue (0.05 gramme = 1 grain) or of methylene blue and iodoform (0.1 gramme = 2 grains) enclosed in a small rubber sac of dental dam tied with small catgut, which has not been subjected to chemical or thermal treatment for sterilization: This raw catgut, which is uncooked connective tissue, is readily digested by the gastric juice (peptic digestion), but not by pancreatic juice (tryptic digestion), as shown by Schmidt in 1899. Six or seven hours after and again eighteen or twenty hours after ingestion the urine and saliva are tested for iodine, and the urine is noted for methylene blue. A positive test, early or late, signifies the presence of gastric digestion.

After all these tests must be very carefully controlled by other tests and the clinical symptoms in order to give their proper interpretation. We notice that Saito (*Berl. Klin. Woch.*, October 1) after a thorough clinical and experimental investigation concludes that the desmoid test depends on numerous factors which affect the motility and secretory power of the stomach and even intestinal digestion may dissolve the catgut. Saito regards its diagnostic value as doubtful. But, it should be remembered, there is not a single test for determining the functions of the stomach which has not been pronounced valueless by some investigator.



## MUSCULAR RHEUMATISM.

The diseases commonly classified under the name of muscular rheumatism form a very important clinical group although theorists have often derided the term rheumatism when applied to these clinical syndromes. It seems, however, according to the recent researches of Bechtold that an infectious origin must be ascribed to muscular rheumatism. In quite a number of cases endocarditis occurs in connection with these muscular pains. The infections causing articular and muscular rheumatism are evidently closely related, although the difference in response to the salicylates would indicate a difference.

Bechtold might have laid emphasis on the clinical fact that muscular rheumatism frequently follows an acute inflammation of the upper air passages. The occurrence of muscular rheumatism in epidemics also argues for its infection origin. The germs are, however, of very low virulence which induces a serous effusion in the muscular tissue. Suppuration is very rare.

## IMPROVED ORTHOGRAPHY.

The improved spelling has not percolated through the brains of very many of our editors as yet. Some of them can not see the signs of the times in the heavens. Nothing is correct but what has been placed in some medical dictionary perhaps thirty years old. The *Medical World* has for several years advocated and used simplified spelling. Some medical journals persist in printing the old diphthongs in etiology and anaemia; others still add final e to such words as antitoxin. It is easy to arouse envy and anger by pointing out the advantages of dropping a few useless letters. Arguments based on historical facts are not sufficient. With most writers it is purely a matter of sentiment. Some will permit the common people to make changes, which ultimately become a part of the language, but it is preposterous for a learned body of orthographers to suggest improvements, and when the president decides to use simplified spelling in his department there is a howl of derision. The force of habit is very tenacious and the reverence for the old becomes almost a fetish.

"Inasmuch as the *Medical Review of Reviews* is published for an English-speaking constituency, we shall continue to employ the English method of spelling, and request our contributors to govern themselves accordingly.

"Foster's Medical Dictionary is a standard work which may well



be our guide in orthography, and whenever a future edition shall incorporate a new word or a so called "improved spelling" of a word, we shall consider that warrant exists, for its adoption."

Hence, the *Review of Reviews* prints aetiology and gynaecology. It should not be forgotten that dictionaries record good usage; they do not establish it. After all the simplified spelling is bound to come; why be in the rear of the procession.

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### HYOSCIN IN LABOR.

After the distressing experiences with scopolamin and morphin anesthesia in surgery it comes as a surprise to find that its use in labor is such a boon to suffering women: at least, a writer in the *New York Medical Journal* has grown enthusiastic over its efficacy. He uses hyo-scin and morphin hypodermatically and declares that the labor progresses steadily and normally in every way. Meanwhile the woman sleeps and unconsciously aids the expulsive forces. This sleep may be made to continue throughout the whole of labor, first and second stages, by repeating the dose every four or five hours.

We distrust this remedy and doubt that it will be found superior to chloroform and just as safe.

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### INTESTINAL AUTOINTOXICATION.

What diseases have not been ascribed to intestinal autointoxication! Chorea, migraine, epilepsy rheumatism, pneumonia, chlorosis, pernicious anemia and many others have been placed by some authors in the category of autointoxications. The latest addition by Fischer is acute coryza in children although little proof for the contention is offered. Who is not familiar with that practitioner who cures everything by careful attention to the bowels! And yet we have no conclusive evidence that intestinal autointoxication causes anything but the well known symptoms associated with diarrheal conditions. Perhaps, too, the old clinical syndrome of "biliousness" must be placed in this group, although the functions of the liver have by no means been worked out and the relationship of hepatic insufficiency to various morbid conditions is by no means clear. Whether our medicines disinfect the intestinal canal or alter the function of the liver is as yet undecided in most cases. It will not do to assign to intestinal autointoxication any important role in the etiology of disease until greater proof has been furnished.

## MEDICAL DIGEST

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### THE PROPHYLACTIC TREATMENT OF HEREDITARY SYPHILIS.

P. Rudaux (*La Clinique*, May 4th), repeats the observation of Pinard that there is too great a tendency in the treatment of syphilis to treat the individual and to neglect the treatment of the species. The prophylactic treatment of hereditary syphilis should receive a greater amount of attention by the profession. Clinically, several distinct problems may call for solution. When paternal syphilis is demonstrated by the occurrence of repeated miscarriages, or the expulsion at term, or near term, of a dead and macerated fœtus, or the birth of infants presenting syphilitic lesions, or dying suddenly a few days after birth, and the father acknowledges an old infection, he should be instructed (1) That before procreating again he should subject himself, for at least six months, to antisyphilitic treatment. (2) That if pregnancy occurs subsequent to this period, the wife should be placed upon a disguised antisyphilitic treatment, during the whole period of pregnancy. (3) That, thanks to these precautions, the infant has every chance of being born healthy; but it should either be nursed by its mother or brought up on the bottle; it should never be given to a wetnurse. In case the physician should be consulted only after the beginning of pregnancy, and the father acknowledges that he formerly had syphilis, it is necessary (1) That the mother should be subjected during the whole duration of pregnancy to systematic antisyphilitic treatment. (2) That the infant likewise should be treated during the early months following its birth, even although no symptoms are present, and, no matter what happens, it should never be allowed to be wetnursed. (3) That the father would do well, before procreating again, to submit to a course of treatment during a period of six months. It is also understood that if the mother is known to be syphilitic, the same necessity for six months' preliminary treatment exists in her case, and, if she nurses her infant, the treatment should be continued during the whole period of nursing. The following approved formula is used by Professor Pinard:

R. Hydrargyri iodidi rubri .....	0.10 gramme;
Potassii iodidi .....	10 grammes;
Syr aurantii .....	300 grammes.

M. Dose, one tablespoonful following or during the two principal meals.

In some cases this may be modified by the addition of lime glycerophosphate, in the same proportion as the potassium iodidi. Should primary or secondary syphilitic accidents make their appearance during the course of a pregnancy, more energetic treatment must be instituted. In such cases the subcutaneous injection of some mercurial salt would be the preferred method, on account of its more rapid action, and because it does not embarrass the stomach.—*New York Medical Journal*.

### DEEP BREATHING.

Every now and then some hygienist extols the value of deep breathing as a prophylactic of lung diseases. We are not sure that exact experiments have been made to test this statement. Between the advocates of rest to the diseased lung and those who advise respiratory gymnastics, the general practitioner has difficulty in selecting.

To quote from an article by Payor (*N. Y. Med. Jour.*, Sept. 8):

Recently it has become the fashion to interdict forcible breathing in those afflicted with pulmonary tuberculosis. The chief reasons for this action seem to be the dangers from infection of new territory and the inciting of hæmorrhage, caused by congestion or the rupture of weak blood vessels. During an acute, active process of tuberculous character the established conviction that rest of the diseased lung promotes recovery seems to have indubitable clinical verification. As the result of some observation, however, I believe the dangers from infection and hæmorrhage are greatly exaggerated. At the same time I doubt that any lasting benefit is to be derived, as a rule, in acute or advanced cases by increased activity of the diseased lung. Deep breathing exercise should be employed with the greatest care in these conditions; but I wish to emphasize distinctly a disagreement with the apparently false doctrine that this practice should be discouraged or prohibited entirely, or for unnecessarily long periods in the incipient or fibroid forms. When the evidence of an acute process or progressive lesion, as portrayed by the local signs and general symptoms, has disappeared, there seems to be no good reason why the affected and healing portion of the lung should not be fully aerated. We send patients to certain regions believed to be especially beneficial, and depend to an unknown extent upon the remedial influence of pure air. Is it not somewhat inconsistent to cautiously

limit the supply of the curative agent for long, indefinite periods? No satisfactory proof exists to demonstrate that exercise of the affected area at the proper time delays formation of a cicatrix. In the absence of facts observers are entitled to an opinion, and better ultimate results are often obtained when the lung is made to perform its function and judicious general exercise is allowed.

### CALCIUM CHLORID.

We have previously referred to the use of calcium salts in phthisis. This chemical has also been highly extolled in various hemorrhagic conditions. Thus in purpura hemorrhagica and in the hemorrhages of the newly born, the administration of calcium chlorid increases the coagulating power of the blood. Other uses are found in an article (*Cleveland Med. Journ.*, August).

In *Merck's Archives* for June, G. Arboar Stephens advises in the treatment of chilblains to administer drugs, which alter the character or quality of the blood, especially as regards its exudation properties. The drug which seems to him the most appropriate was calcium chlorid, and he gave it in 10 or 15 grain doses with licorice extract three times a day, and the patients, most of whom were engaged in sedentary occupations, began in two or three days to show remarkable signs of improvement. Some whose chilblains had broken found that these were rapidly healing and others who were expecting them to break were agreeably disappointed to find them gradually subsiding. Several patients remarked that when previously healing, stiffness was felt for some time, but with the calcium chlorid the stiffness disappeared very quickly. In another series of 20 cases in children, some with very bad chilblains in the ulcerating stage, 10 grain doses of calcium chlorid produced decided improvement in three days. Calcium lactate has been found equally efficient. The only unpleasant effect was a sensation of giddiness in two cases. Attention is also called to the fact in the *New York Medical Journal* (from *Le Bulletin Medical*) that Arnold Netter reports that so far no method has been found to prevent the appearance of the urticarial eruption after the injection of a dose of serum. He has found, however, that the use of calcium chlorid in the dose of one gram a day on the day of injection, and for two days following, constituted an efficient prophylactic in a large proportion of the cases. Out of 252 patients who took the remedy as directed, there were only a little over two per cent. of eruptions, while in 258 cases not receiving it, the eruptions were over 15 per cent. The use of calcium chlorid does not in any way impair the action of the diphtheria

antitoxin, the mortality in the two groups being nearly the same. The calcium chlorid may be replaced by the lactate which has no taste and is also very soluble.

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### THE CAUSE OF HEART-BEAT.

W. H. Howell, Baltimore (*Journal A. M. A.*, June 2-9, 1906), gives an elaborate historical review of facts and theories as to the causes and mechanism of the heart beat and critically discusses the factors in the problem. From this study of the data so far as known, he concludes that the myogenic theory is the most probable of any that have been offered so far. It does not explain satisfactorily, however, the phenomenon of the co-ordination of the heart beat which can be disturbed by puncture of a particular region in the ventricular septum, although this is not better explained on the neurogenic theory. As regards the further deeper question of the initial cause of the heart beat, the most hopeful line of investigation has been that of late years, dealing with the action of the inorganic constituents of the blood on the heart beat. He objects to being quoted as holding that calcium ions constitute the inner stimulus; the role of the calcium and sodium salts, according to the provisional hypothesis he has chosen to guide his investigations, consists in replacing the potassium and converting a part of the store of stable energy-producing material in the normal heart into an unstable easily dissociable compound, thus producing the contraction. This hypothesis, as he shows more in detail, accounts for some of the most characteristic features of the heart beat. Whether it or any other of those proposed be correct, we may congratulate ourselves on the acquisition of the knowledge gained by the labors of the experimental physiologists of the last quarter of a century, that the inorganic salts of the blood and lymph play an essential role in the production of the heart beat.

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### A CONTRIBUTION TO THE ETIOLOGY OF OTITIS MEDIA SUPPURATIVA POST MORBILLOS.

Gustav Baar reports the history of five children in the same family who were attacked with measles. In all of them there appeared an acute suppurative otitis media. In three of these children the mastoid process, the antrum, and the cranial cavity had to be opened on account of alarming cerebral symptoms which appeared in spite of previous painstaking antiphlogistic and antiseptic treatment, poultices,



and drainage after careful irrigation of the exterior auditory meatus with warm solutions of borax or instillation with peroxide of hydrogen and drying. The writer declares that the appearance of purulent inflammation of the middle ear at the end of the second week of illness seems to speak very much against the universal view that the measles otitides are caused by the primary exanthem. The pus taken from the depth of the exterior meatus, as well as from the antrum, mastoid process, and extradural abscesses, contained the same staphylococcus.—*Medical Record*, August 18, 1906.

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### PRETUBERCULAR CONDITIONS.

R. R. Shurly, Detroit, Mich. (*Journal A. M. A.*, June 16), believes that the pretubercular stage of phthisis, as we now classify it, is in the vast majority of cases only a latent unrecognized tuberculosis and that the development of the bacillus tuberculosis is in many a problem of cell nutrition, the biochemic phenomena of which are not understood. Sharp lines of demarcation between the pretubercular and incipient stages can not be drawn. Among the leading symptoms of the former he lays stress on a progressive loss of weight accompanied with general malaise and sometimes also acceleration of the pulse. When these symptoms are present, without other definite signs, and acute and chronic diseases can be excluded, a true latent tuberculosis exists. Chest measurements and vital capacity should then be carefully tested and the conditions of lymphatism and digestive disturbances which may exist, be looked for. He specially calls attention to the relation of the chloroanemias to the development of phthisis. The constant association of anemic blood change with imperfect chest development and progressive loss of weight is very noticeable, the hemoglobin is diminished out of all proportion to the loss of red cells. A recognition of this sign, like pleurisy, as frequently only the initial evidence of a slumbering tuberculosis, would prompt the recourse to the hygienic and medicinal measures that would produce a complete recovery. Shurly recommends in these cases the hypodermic administration of iron and arsenic, the former in the form of the green ammoniated citrate in doses of from .05 to 1 gram and of arsenate and soda, .001 to .002 gram, starting with the smaller dosage. A blood examination should be made, after which punctures may be given daily. The good effects are quickly manifested and an increase of 5 to 10 per cent. hemoglobin a week can be expected. He likewise calls attention to two prominent characteristics of the pulse in the pretubercular stage; the slight variation on change of position noted by Wells and



Loomis, and the relative feebleness of arterial pressure. In conclusion, he remarks that while no one or two signs are conclusive, yet, taken together we have enough danger signals to warn us. Hypodermic medication with iron, arsenic, hypophosphites and strychnia offers a valuable adjunct to the necessary pure air, good food and sensible hygiene.

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### MECHANOTHERAPY.

The subject of physical therapy in its many forms is still receiving too little attention, hence, it is with pleasure that we call attention to an article by Ran (*Medical Record*, August 11). We will give his conclusion first:

*Conclusion.*—In this short report I have merely given the outlines of the treatment and of the work accomplished in eleven months at the hospital. I have mentioned only cases treated at the hospital, because these cases were under the direct observation of the different surgeons of the hospital who sent them to us. We were kept very busy and a short time only could be given to each patient. If more time daily could be devoted to each case, a better record could be obtained. The general results have been very satisfactory, and we think that the treatment deserves to be given due consideration by the surgeons and to be adopted in our hospitals. We think that if it is properly given it will lessen to a great extent the period of idleness following injuries to the extremities. This is especially important in the case of workingmen, when every day of idleness means a loss of wages and a hardship for the injured man and for his family.

Attention is called to the well-known fact that placing a fractured limb in a splint for a time does not always procure functional recovery. Application of heat and massage bring up this desired result. Manipulation, passive movement and even active movement aids to procure functional cure.

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### OCCULT HEMORRHAGE IN THE DIAGNOSIS OF ULCER AND CARCINOMA OF THE STOMACH.

Friedenwald and Rosenthal call attention to the significance of two very simple tests. They quote Boas:

"About three to five c.c. of glacial acetic acid are added to fifteen c.c. of gastric contents, or five to ten grammes of soft or softened fæces, and the whole is poured into a test tube and extracted with ether. There must be no admixture of alcohol, as this disturbs the

test. As guaiac dissolves readily in ether it is not necessary to use the tincture. A few grains of finely pulverized guaiac resin are added to the ether extract, the whole is carefully shaken, and then twenty to thirty drops of ozonized oil of turpentine are added. The whole is shaken up again and then set aside. The color gradually changes to a violet or blue, rendered still more intense by addition of chloroform. This blue tint is sometimes masked by the brownish color of the fluid, and the findings of the test can be controlled by repeating it with Klunge's aloin test. As much aloin as can be taken up on the tip of a small spatula is placed in a test tube and lightly shaken up with three to five c.c. of sixty to seventy per cent. alcohol. The acetic acid and ether extract of the feces or stomach content, prepared as described, is treated with twenty to thirty drops of ozonized turpentine and then immediately afterward with ten to fifteen drops of the freshly prepared aloin solution. In the presence of blood the fluid rapidly assumes a bright red color, which turns to a fairly durable cherry red as it stands. If there is no blood, the fluid remains yellow for an hour or so, and then becomes a light pink. The color changes may be hastened by adding a few drops of chloroform. Boas makes a practice of conducting the two tests as controls, and believes that the aloin is superior in several points to the guaiacum. It is not influenced by the presence of fats or fatty acids, and is sometimes positive when the guaiac findings are dubious."

These tests are to demonstrate the occult hemorrhage, which according to Boas is never found in chronic gastritis, hyperacidity or hypersecretion. It occurs occasionally in gastric ulcer but almost always in cancer. To quote further:

In a further communication, Boas showed that errors, due to slight bleedings induced by introducing the stomach tube, causing minute erosions, could be avoided by investigating the feces rather than the gastric contents; however, in the examination of the stools for these hemorrhages certain precautions must be taken, namely, to exclude food containing fresh unboiled or medium done meats and sausage from the diet for two days before the test is undertaken, as well as to ensure soft movements by means of Carlsbad salts. Menstrual as well as hæmorrhoidal blood must also be excluded, and hæmorrhages from the teeth, mouth, throat, nose, lungs, and intestines must be guarded against. Koziakowski has recently advised a restriction in diet to milk, sugar, flour, bread, rice, eggs, nuts, fruit, and not too much fat previously to applying this test.

The authors mentioned corroborate the assertions of Boas. It is a valuable diagnostic test, as they demonstrated it in seventy-four per

cent. of cases of ulcer of the stomach and eighty-two per cent. of gastric cancer.

## RECENT WORK IN THE CLINICAL PATHOLOGY OF THE URINE.

Hastings (*N. Y. Med. Journ.*, September 8) gives an excellent resume of recent work in the clinical pathology of the urine. Under the heading of variation in normal constituents of the urine he writes:

The recent active interest in the variations of the nitrogenous constituents of normal and pathological urines is largely due to the publications of von Jaksch's (1) early in 1902, and Folin (2) during 1904 and early in 1905. Before 1903 most of the observations and studies on urinary nitrogen from the clinical side related to urea and uric acid in uræmia, eclampsia, and gout, without respect for diet or possible normal variations in the output of these substances. In 1902 Walker Hall (3) published an excellent monograph on the *Purin Bodies of Food Stuffs*, in which are recorded the purin base equivalent of the ordinary foods, a study of the influence of diet on the purin base excretion in gout and other diseases, the food stuffs which are purin free, and finally a rough method for rapidly estimating the purin bodies in the urine after establishing a patient on a purin free diet under which conditions a rough method as with Walker Hall's purinometer will give results of more value clinically than the more exact chemical methods with no respect for diet, as has been done in the past.

The *purinometer* estimation of purin bodies depends upon the precipitation and removal of the phosphates with subsequent precipitation of the purins as silver salt—somewhat similar to the Camerer and Ludwig-Salkowski methods for the estimation of the alloxur bases and for uric acid—and an estimation of the amount of purin bodies present from the amount of the precipitate. Walker Hall demonstrated two facts conclusively that the estimation of the uric acid in the urine is of no clinical value in comparison to that of the total purin bodies, since the xanthine group as well as uric acid represents the end products of nuclein metabolism, and secondly that the ureauric acid quotient is worthless clinically, since, while the urea output has a direct relation to the amount of the proteid in the food, the uric acid may be relatively independent of it.

Folin's analysis and methods of examination are given a very high place. His exhaustive study of the urine of thirty healthy individuals form a valuable basis. To quote further:

The extreme variations in total nitrogen and urea nitrogen pro-

duced experimentally by Folin in normal individuals show these two factors to be dependent mainly upon variations in diet and, therefore, when estimated singly to be of least value for the purpose of drawing conclusions in regard to disease. The ammonia nitrogen and the uric acid nitrogen occupy a middle place in that they vary less with the alteration of protein diet, and yet the variation, with a decrease in protein food, is less than that of the total and urea nitrogens. Thus observations of little value are to be obtained through determinations of one or two of these nitrogen partitions, but estimations of all of them and calculation of their percentages relative to the total nitrogen furnish data from which information of value may be obtained. Finally, the twenty-four hour creatinin nitrogen is the one nitrogen factor unchanged by variation in the meat free protein diet in the normal adult, and this should be the nitrogen partition chosen for estimation, if one estimation is to be made in the study of pathological conditions. So far no such observations have been carried out in disease excepting those of Folin (9) in cases of general paralysis where little or no variation was found.

Folin's methods are too exhaustive for clinical work. The following methods are used clinically:

1. The determination of the total nitrogen by Kjeldahl; 2. the estimation of the nitrogen content of the phosphotungstic acid precipitate; 3. the estimation of the urea (urea nitrogen) in the filtrate from the phosphotungstic acid precipitate; 4. the estimation of the total nitrogen in the filtrate from the phosphotungstic acid precipitate.

The recent work on the toxæmia of pregnancy has really grown out of this work of Folin's. The nitrogen, as has been shown by Williams, and others, in certain forms of toxæmia, occurs in the form of ammonia in large percentage instead of urea. The clinician must remember that the hypobromite method estimates the urea nitrogen plus the ammonia nitrogen.

If the urea is determined quantitatively by the hypobromite method it should be borne in mind that the method estimates this nitrogen of ammonia as readily as the nitrogen of urea, also a portion of the nitrogen of kreatinin and extractives which occur in such small amounts in the urine as not to vitiate conclusions regarding urea nitrogen by this method; on the other hand, according to Hufner (25), this method does not include the nitrogen of the amidoacids, so that a high percentage of rest nitrogen determined by subtracting from the total nitrogen the urea nitrogen estimated by the hypobromite method would suggest strongly an increased percentage of amidoacids in the urine, such as we would expect in certain cases of eclampsia, according

to Ewing. Provided there be no high percentage of rest nitrogen, when the urea nitrogen is determined by the hypobromite method, one must consider that here the ammonia nitrogen is included, and that a high ammonia nitrogen percentage may be present, as one would expect in certain cases of eclampsia, according to Williams and Slemons; and therefore the ammonia nitrogen must be determined by Folin's or some other method before proper conclusions can be arrived at.

It is to be hoped that for clinical purposes the determination of the nitrogen partitions will resolve itself into some such simple procedure as the following, viz.: estimation of the total nitrogen by Kjeldahl, estimation of urea nitrogen plus ammonia nitrogen by the hypobromite method (correcting for temperature and pressure), estimation of the ammonia nitrogen by Folin's method, and finally the calculation for the rest nitrogen, which would include the amidoacid nitrogen, from these factors.

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### LITTLE'S DISEASE.

Glascoock (*N. Y. Med. Jour.*, September 1) reports a case of Little's Disease, for the details of which we must refer to the original article. He gives a very interesting summary of our knowledge concerning this affection:

The disorder was first discovered by Little in 1846, and he then called it "congenital spastic rigidity of the limbs." Thirty years later Seguin discovered a similar condition, which he termed "tetanoid paraplegia." In 1873 Erb published a paper on "Spastic spinal paralysis," and in the same year Charcot spoke most probably of this malady under the name of "spasmodic dorsal tabes." A few years later, from a more careful study of the writings of Seguin, Erb, and Charcot, "spastic spinal paralysis," or "lateral sclerosis," developed as an independent malady. This disease was then generally recognized for a long time, but after various controversies its real existence was denied, and the symptom complex constituting the disease was thought to be a form of dorsal myelitis. Several years ago, however, the Germans and the French revised the work of Little: they classified the disease as a separate disorder, and named it after him.

Little held that the affection was due to an injury to or lack of development of the pyramidal tracts of the cord; it was prenatal or natal in origin and most frequently followed premature or forced delivery. This latter difficulty, I think, was without doubt the cause in the case under consideration, which presents all the diagnostic features of the disease. I sum them up as follows: The early appearance of



the spastic gait; the contractures following closely; exaggerated reflexes; ankle clonus; the bilateral nature of the malady; the absence of disorders of the sensorium; and the noninvolvement of the bladder and rectal reflexes. The patient's infirmities of character, which appeared at puberty and which became so pronounced recently, are recorded to be a frequent accompaniment of Little's disease. I might add that several recent authorities describe a special "cerebral type," in which nystagmus, speech disorders, and athetosis are featured, with imbecility or early mental deterioration.

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### FOOD PRESERVATIVES.

Jones (*British Medical Jour.*, August 18) at last gives us some definite directions as regards food preservatives. What to use and what not to use, is no longer a question. Here are his recommendations:

1. The use of formaldehyde to be prohibited.
2. No more than one grain to the pint or one grain to the pound of salicylic acid to be allowed, and its presence to be declared.
3. All preservatives and coloring matter in milk to be strictly prohibited.
4. Boric acid or borax—not over 0.25 per cent.—to be the only preservative of cream, presence to be declared.
5. Boric acid or borax (not over five per cent.) to be the only preservative used with butter and margarine.
6. No chemical preservatives to be used in invalids or children's food.
7. The use of copper salts to be prohibited.
8. Proper government supervision.

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### BENZINE AND GASOLINE POISONING.

The increasing use of benzine and gasoline has resulted in an occasional case of poisoning, though few have as yet been reported. Four of such fatal cases have recently been reported in the foreign journals. In the *Muenchener medizinische Wochenschrift*, 1906, No. 9, Burgh tells of an eighteen-months-old child who swallowed a little more than an ounce of benzine. He groaned loudly and became pale, the pupils reacted only feebly, the skin was cool and covered with perspiration. In spite of washing out the stomach, death followed in four hours. At autopsy the semi-lunar valves of the aorta and the chordæ tendineæ of the mitral valve were found to be a bright rosy red in color; the blood was fluid and of a cherry red color; the lungs were filled with blood and showed capillary extravasations; the air pas-



sages were filled with a foamy, bloody fluid, and the brain, liver and kidneys showed congestion.

Characteristic of benzine poisoning seem to be the hemorrhages into the lungs, which are especially great and numerous. Other conditions point to death from suffocation; the red rose color of the aortic valves and cherry-red color of the blood reminding one of death from carbon monoxide inhalation. In the *Wiener medizinische Wochenschrift*, 1906, No. 8, Zoernlaib reports two more fatal cases, almost similar, and one case where the immediate use of an emetic and the stomach tube saved the life, preventing any noteworthy symptom of the poisoning.

Two cases of gasoline poisoning have recently come to the attention of the reviewer. One of these, the infant daughter of a physician, drank a cupful of gasoline, and almost immediately afterward shrieked and fell to the ground unconscious. The stomach tube was used within a few moments, but profuse hemorrhages from the lungs soon occurred, and death rapidly followed. The other case was a drug clerk who emptied half a glass of gasoline, mistaking it for water. Emetics and irrigation of the stomach were immediately resorted to, with the result that the man was able to work later in the day.—*N. Y. State Journal of Medicine*.

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### THE IODINE REACTION IN LEUCOCYTES.

J. Barnicot has carried out experiments testing the reaction of leucocytes to iodine. In this investigation he used Ehrlich's method of staining, which consists in mounting and simultaneously staining the air-dried film of blood in a mixture of iodine, 1; potassium iodine, 3; distilled water, 100; with enough gum acacia to convert the fluid to the consistency of a thin syrup.

Two kinds of reaction are seen, an extra-cellular and an intra-cellular. The extra-cellular reaction is present in normal and pathological blood; in the latter it may be increased. It may appear in the form of small, amorphous, purple-brown fragments which are either free in the blood plasma or enclosed within cells which appear to correspond to the blood-platelets. Similar fragments are sometimes seen lying in a mass of granular protoplasmic debris.

This extra-cellular reaction is so inconstant in occurrence and amount as to have no bearing on a consideration of the true iodine reaction.

The intra-cellular reaction is determined by the staining properties of the polymorphonuclear leucocytes. Cells staining a faint le-

mon-yellow or yellowish-brown tinge are classed as "negative."

Those staining a diffuse brown or containing purple-brown granules in their periphery are classed as "positive."

Opinions differ as to the chemical nature of the iodophile substance, but the weight of evidence seems to point to its being glycogen, probably in combination with albumin.

In regard to the significance of the iodine reaction, the writer believes it to be an expression of a degenerative process within the cell and not an evidence of increased activity for purposes of defense. The reaction bears no relation to leucocytosis, when both are present in the same blood, other than that of a common cause; the reaction may be absent in leucocytosis, present with a normal leucocyte count, or even with leucopenia.

A "positive" reaction is evidence of a toxæmia, bacterial or non-bacterial in origin, and to some extent the intensity of the reaction is parallel with the intensity of the toxæmia.

The continued presence of an iodine reaction in pneumonia after crisis is a further aid to other clinical signs which lead one to suspect delayed resolution or some complication.

When an accumulation of pus is thought to exist, the absence of a reaction is of very great negative value.

The writer concludes that the reaction is—apart from the two conditions above mentioned—so inconstant in manifestation or so variable in degree, that it cannot with justice be granted a serious place among the means at our disposal for the diagnosis or prognosis of disease.—*Journal of Pathology and Bacteriology*, June, 1906.

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## TREATMENT OF TAPEWORM.

This was the subject of the paper read by Dr. Samuel P. Gerhard, in which he called attention to the three specimens which were most commonly met with, *i. e.*, the beef tapeworm or *Tænia saginata*, the pork tapeworm or *Tænia solium*, and the broad tapeworm or *Bothriocephalus*; the former being the one most commonly met with in this country. He called attention to the necessity of thoroughly cooking the meat before it is eaten, which, together with cleanliness on the part of those engaged in handling it, and systematic and regular inspection of the cattle and the meat after it is in the market, he believed would materially decrease the number of cases of this condition. He remarked upon the difficulty in removing the worm and considered that the treatment which was applicable to worms of one character was applicable to all. The preparation of the

patient prior to the administration of the remedy he considered a most important factor. The patient should be required to fast for twenty-four hours before the medicine is administered, during which time the bowels should be thoroughly emptied by means of purgatives. Among the drugs mentioned were the male fern, konso (the latter being liable to produce severe nausea and vomiting in some cases), the bark of the pomegranate, together with its alkaloid, pelletierine. The last two, however, are very impalatable and may produce toxic effects in doses large enough to be effective. Oil of turpentine was formerly used to a great extent, but owing to its nauseating taste and difficulty of administration has somewhat fallen into disuse. Kamala is a very active drug, but its use is contra-indicated, because it causes nausea and vomiting in many instances. Powdered pumpkin seeds were thought to be a valuable and harmless remedy, especially in children. He emphasized particularly the importance of removing the whole worm in all cases, as if the head or any of the segments remain it will develop again in from six to eight weeks. He believed that the great drawback to the administration of many of the remedies was the very large dose required, being in some instances as much as a pint of a bitter, nauseating liquid, to be taken at one or two draughts, necessitating loss of time, and being a very serious matter with a weak and debilitated patient. He reported a method which he had found very satisfactory. The patient is instructed to thoroughly clean out the bowels by purgatives the day previous to the administration of the remedy. In the morning, as early as possible, a 20-grain capsule of pelletierine tannate is given and after this has operated fully, which is usually in about two or three hours, the following prescription is administered:

Olei resinæ Aspidii .....	drams, ij
Ether .....	drams, ij
Hydrargyri chloridi mitis.....	grains, xij

This is divided into sixteen capsules and one given every ten minutes, no food being taken. In about two or three hours the worm will be expelled whole with its head intact. He stated that he had recently employed this method in seven cases with very satisfactory results, the depression is generally very slight and does not last longer than two or three hours, and if it does exist, light food can be administered after the worm is expelled.

## HYDROTHERAPY IN CHRONIC RHEUMATISM.

Levy (*N. Y. Med. Jour.*, October 13) gives some good hints as to the treatment of chronic rheumatism, a disease which is often unsatisfactory as to therapeutic results.

The patient is given a hot air bath or an electric light bath of a temperature of 150° F. for twenty minutes to induce profuse perspiration. Hot air or the electric bath is superior to the Turkish bath, because in the former the patient's head is outside of the cabinet breathing pure, cool air, and besides, the patient does not breathe air contaminated with emanations from a number of persons who happen to be in the same hot air room, as occurs in Turkish bath establishments. After the hot air bath the patient is given a circular douche, temperature 90° F., of one minute duration. This is followed by the Scotch douche to the joints or muscles affected. As the Scotch douche is so little known in this country, and as its therapeutical effects are so striking in these rheumatic conditions, I shall describe this douche in some detail.

It is a douche where high and low temperatures of water are applied alternately. It can be called the douche of thermic contrasts. My douche apparatus has three tubes placed side by side, one for live steam, one for cold water, and the third gives us any desired temperature as the thermometer is in contact with the mixing chamber. I usually employ steam and cold water for the Scotch douche, and by means of the rapid, alternation in the application of live steam and cold water to the affected parts, a most profound local effect is produced, and a marked hydrotherapeutical reaction is brought about. The value of this douche consists in the combination of thermic and mechanical stimulation, the mechanical effect is produced, because the water comes out of the tubes under pressure which can be increased as desired, while the marked thermic stimulation is due to the tremendous difference in the temperature of cold water and steam. The increase of vital activity brought about by the reaction following the Scotch douche, becomes of great value in restoring the functions of diseased parts. On account of the improved circulation absorption of the deposits in the joints is brought about.

After the Scotch douche, massage, with special attention given to the affected joints or muscles, is very useful in these cases. Often the combination of a douche with massage, called douche-massage, acts very beneficially. Prolonged hot tub baths (100° F.) with massage during the bath, followed by warm blanket pack, are useful procedures for robust rheumatic patients.

Hot fomentations, as recommended by Baruch, are especially indicated in cases of chronic muscular rheumatism. If the compresses are thoroughly wrung out, and if the affected region is greased with petrolatum, then there is no danger of burning the patient. After the termination of the fomentation the patient is washed off with water at 70° with friction and dried. The best time for the application of these compresses is just before the patient retires. These patients should be advised to drink plenty of water, from 6 to 8 glasses a day.

### FISSURE OF THE NIPPLES.

This very troublesome affection in nursing women has had considerable attention from clinicians, but it must be admitted that there is no infallible cure except to remove the baby from the breast, which naturally the physician is loathe to do in these days when the preservation of the breast-milk for infants is so difficult.

The nipple-shield is an admirable protective agent in a few cases only. The shield composed entirely of soft rubber is often easier applied than the usual glass and rubber variety. To hasten healing and relieve pain Engel recommends silver nitrat applied with a brush, using a 6 per cent. solution. He also suggests the following formula:

R.

Acid tannici.....	2.
Glycerin .....	20
Alcohol ad .....	100
Apply with brush several times a day.	

Orthoform or anesthesin in the form of an ointment (5 to 10 per cent.) have been recommended and occasionally give great relief. We often use the following formula;

R.

Thymal iodid .....	gr xx
Zinci oxidi .....	dr. i
Acid tannici .....	gr xx
Petrolati .....	oz. i

M. Sig. Apply after nursing and wipe off with olive oil before nursing.

It is a mistake to attempt to harden the nipples with alcohol. Nipples should be soft and pliable, not hard. Wool-fat or a diluted glycerin solution can be used to keep the nipples soft. Do not let the baby nurse too long; do not wash the nipples too much; dry them thoroughly after nursing.



A prescription recently praised by Seariff (*Journ. de Med. N. Y. Med. Jour.*) impresses us as being a combination which should prove very valuable for fissure of the nipples:

R.

Balsam Pern  
 Balsam Peru .....aa 2.  
 Ol amygdalae dulcis..... 30.  
 Aqua calsis ..... 15.  
 M.

We have also found the following powder to be valuable:

R.

Thymal iodid  
 Acid borici  
 Bismuth subnitrat aa .....dr. i  
 M.

## PHARYNGEAL ABSCESESSES.

Some recent experience has impressed us with the great importance of keeping in mind all the symptoms and signs of pharyngeal abscess especially in children. A thorough discussion of these abscesses by Waugh (*Lancet*, Sept. 29,) should prove of general interest; an abstract of which from the *N. Y. Med. Journal* (Oct. 20.) we give below:

Waugh divides pharyngeal abscesses into two classes, tuberculous and non-tuberculous, and the latter may be subdivided into intrapharyngeal and extrapharyngeal abscesses: 1. Tuberculous pharyngeal abscesses are the only ones which arise in the middle line of the posterior wall of the pharynx and spread outwards. They occur in cases of tuberculosis of the cervical vertebrae, and their onset is insidious. Inspection alone is valueless and must be followed by palpation. If neglected they attain considerable size, and superficial ulceration of the pharyngeal wall takes place, with danger of secondary infection. Dysphagia is generally the first symptom. These abscesses must always be opened by an incision in the neck and the lining membrane removed methodically by a sharp spoon, not by haphazard scrapings. Enlarged glands in the neck should be dissected out. The abscesses tend to recur as only seldom is one able to remove a sequestrum from the bodies of the vertebrae. 2. Intrapharyngeal nontuberculous abscesses arise invariably as the result of some inflammatory affection of the tonsil. They never arise in the middle

line, but always on the side wall of the pharynx immediately behind one posterior pillar of the fauces. They spread backward and across the pharynx, until they may nearly reach the other tonsil. A groove can always be felt between the abscess and the tonsil on the side opposite the one on which it has started. It is exceedingly rare for these abscesses to point externally in the neck. In the first stages they exist as small hard rounded swellings in the side wall of the pharynx immediately behind the posterior faucial pillar. In the advanced stages all the signs and symptoms are those of obstructive dyspnoea. Cases have been mistaken for laryngeal diphtheria. 3. Extrapharyngeal abscesses are usually due to the breaking down of an enlarged lymphatic gland of the neck near the pharyngeal wall. The enlargement is usually due to a mixed infection, and is not purely tuberculous. Such abscesses must therefore always have been preceded by enlarged glands of the neck which had existed for some time. Intrapharyngeal abscesses are best treated by preventing their formation; this can be done in their early stages by syringing the throat with an alkaline lotion, and painting the throat with some antiseptic application, such as salol in glycerin. When all signs of acute inflammation have disappeared, the tonsils should be completely removed by enucleation, thus rendering recurrence of the abscess an impossibility. When the abscess has already formed, operation is the only treatment. Intrapharyngeal abscesses should be opened through the inner wall of the pharynx. An anæsthetic should be used, and the abscess opened its whole length, so as to prevent the formation of a pocket. Extrapharyngeal abscesses must be opened externally; the operation involves the complete removal of all the enlarged glands.

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### HOW TO PREVENT BALDNESS.

We are still fighting baldness and judging from the many hairless scalps on the streets, we usually fail. There can be no doubt that greater efforts on the part of the physician will reap better results. Not long ago Lassar delivered a very practical address on this subject. (*Deutsche Med. Woch.*) The etiology of this disorder in its various forms was briefly discussed. We will refer only to some of his prophylactic and therapeutic rules:

"The avoidance of baldness consists in the prevention and early treatment of the diseases of the hair.

"Frequent washing, shampooing and rubbing the scalp are the best preventive measures against baldness."

The common use of combs and brushes must be interdicted, each individual should have his own comb and brush.

He recommends a daily washing of the hair and scalp with soap and water to begin with, this measure need be used only every two or three days when the condition improves. He finds tar soap very good. For blond hair he recommends the following shampoo:

R.

Potas carbonat .....	
Sodii carbonat .....	aa 15.
Sapo domest pulv.....	70.
Aquae rosae .....	100.

The hair should always be dried thoroughly. Then apply a 1 to 1000 solution of corrosive sublimate. Let the snblimate solution dry. Then rub into scalp gently.

R.

Thymol .....	0.5
Alcohol .....	200.

M.

or

R.

Beta naphthol .....	0.5
Alcohol absolute .....	200.

Lastly a light application of the following:

R.

Acid salicylici .....	1.
Tinct benzoin .....	2.
Ol. Bergamot .....	qtt. xv.
Vaselin .....	p.s. od. 50.

It will be noticed that the preventive of baldness necessitates time and effort. If this is followed out the results are very good.

## SURGICAL DIGEST

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### DISCISSION OF THE PLEURA IN THE TREATMENT OF CHRONIC EMPYEMA.

In 1893 it was demonstrated that lung tissue long buried in thickened pleura does not lose its power to expand, and if freed will expand. FOWLER in that year successfully operated upon a case of empyema of two years' standing, removing scar tissue from diaphragm, pericardium, and lung.

The cavities to be obliterated are usually deeply placed and the pulmonary pleura so far from the surface that the formation of a large flap containing ribs and soft parts is a necessary preliminary step to decortication. Moreover, owing to depth, the visceral pleura is often with great difficulty detached. The writer observed that an incision through the thickened pleura down to lung tissue widened rapidly with each respiration until the cut became a groove, probably because of the tendency of scar tissue under tension to retract. The writer's operation, which he calls "discission" takes advantage of this retraction, and "consists of gridironing the pulmonary pleura with many parallel incisions" about one-fourth inch apart, and crossing these by a similar set at an angle. If the cuts are made deep enough the little islands shrivel in size while the discission is still in progress. The next step in freeing the lung is "an incision cautiously carried through the length of the groove or angle of reflexion of the costal and pulmonary pleura." If carried towards the chest wall there is no danger of wounding large vessels or of opening sound pleura above.

The writer refers to the frequency of sudden death during operations for empyema and recommends that the patient always be on his back, or slightly on the sound side. Thorough inspection and exploration, with the finger, of the cavity to be obliterated should be made by incision of a piece of rib above the fistula; then ample room obtained by further sub-periosteal resection of ribs. If decortication of pleura from diaphragm and lung is easily performed it is preferable; if not discission, incision of angle of reflexion, and excision of thickened costal pleura.

Especially should the patient be carefully watched lest too much be attempted at one sitting. In one case no less than eight operations

were necessary to complete obliteration of the cavity and effect a cure.  
—*St. Paul Medical Journal*.

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## THE EFFECT OF TOBACCO ON THE NOSE, THROAT AND EAR.

The subject is a very interesting one to general practitioners as well as to specialists in nose, throat and ear work. It is of interest to the laity in a different way from most medical discussions.

The article tells us that the changes produced in the upper respiratory tract by excessive smoking are in no way characteristic but resemble those brought about by other irritants. Smoking is the most harmful use of tobacco, acting as it does in two ways by its local effect on the tissue and membranes and by its effect on the nerves through the absorption of its active principal. Effects on the mucosa that are observed in smokers are not found in users of snuff or chewers. So that the writer thinks it proper to associate some of the ill effects to combustion products in addition to the tobacco itself. He thinks that this bears some relation to the amount of saltpeter present. The addition of this chemical renders the tobacco more irritating to the mucosa, as the nitrate of potash is decomposed and free nitric acid is given off.

Besides the local irritation the effect on the general system is of importance. This also plays some part in producing the morbid changes in the mucosa. This takes place as the result of alterations in the vaso-motor system whereby the vascular tonus is rendered susceptible to slight influences. De Sota is quoted as showing three phases of pharyngitis in tobacco users: the first an erythema occurring in those who smoke in moderation; second an acute vesicular pharyngitis follows the smoking of strong cigars, if cause is not removed it becomes chronic. The most frequent change found in constant smokers is chronic granular pharyngitis. Nasal mucosa is always involved to some degree. The changes do not differ from those in a chronic rhinitis. The effect on the larynx is less marked says the writer, he doubts if it is ever a cause of acute laryngitis but says that smoking is not infrequently a factor in chronic laryngitis.

As to the middle ear when changes can be ascribed to excessive smoking it is secondary to the effect on the nose and pharynx. The mucosa of the eustachian tube becomes effected and if this is continued



catarrhal changes take place in the middle ear. The writer thinks that smoking should be prohibited where catarrhal middle ear changes are marked. The author thinks that the development of a nervous deafness from excessive smoking is a more important condition than an effection of the middle ear.

The subject is surely one of special interest and merits careful investigation. The article is thoughtful and helpful.—*Pennsylvania Medical Journal*.

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## DEFECTS OF HEARING AND SPEECH IN YOUNG CHILDREN.

The author opens this subject with an observation on the difficulty of detecting hearing defects in many cases and the liability on this account of laying up to dullness or stupidity inattention at school. In order to aid parents and teachers in recognizing a defective hearing a few statistics are given.

Of 450 cases taken 371 were attending schools and the other 79 were either deaf mutes or not of school age. Of the 371, 74 were between 5 and 7 years of age; 200 were between 8 and 12; 97 were 13 years or older. One hundred and ninety-nine were females and 172 were males. As to causation 219 of the cases were of purulent origin and 124 of non-suppurative origin. In non-suppurative cases both ears were affected almost without exception. The author believes that even with normal hearing the left ear is usually inferior in hearing power to the right. Belonging to the above groups, 10 cases had been brought on by boxing or pulling the ears, 33 from ocean bathing, 3 from sniffing up some solution or from using the nasal douche, 31 from scarlet fever, 17 from measles, 5 from diphtheria, 4 from whooping cough, 1 from mumps and 1 from syphilis. In 52 cases the external canal was obstructed by cerumen, in 7 by foreign bodies and in twenty-five by narrowing of its walls. After more minute details as to etiology he takes up the second group of 79, those considered totally deaf and of the statistics about these I will merely give the general grouping as to cause. Eighteen congenital deaf mutes, 2 cerebral meningitis, 19 purulent otitis, 17 non-purulent otitis.

The author calls attention to the fact that the greater number of all cases are due to inflammatory conditions of the ear. The inherited tendency and congenital anomalies are dealt with.

The author believes that dumbness is most often due to neglect. Early attention to home instruction of deaf children is urged. "Hearing children naturally pick up their earlier education without effort from parents or by themselves, but deaf children must be remittingly taught at close range: words must be uttered directly into the ear, not loudly but distinctly." Tubes are also advised and it is suggested that the child be taught to speak thro' the tube into its own ears to compare its voice with that of the instructor. "If this course be pursued early enough, I am convinced that but few children would be found without any hearing-sense, and many who have considerable hearing likely to be lost from disuse would gradually be improved."

Inattention must be overcome, the child must not be allowed to rely too much on vision, these matters must be insisted on. Deaf children should not be taught alone but should be placed with hearing children. The writer thinks that an exception should be made in the case of deaf children in regard to the school age as their training should begin earlier than hearing pupils.—*The Massachusetts Medical Journal*.

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## THERAPEUTIC NOTES

Sparta (*Berl. Klin. Woch.*) treated a severe case of diabetes insipidus following an injury to the head by the hypodermatic use of strychnine with good results.

Bruning (*Med. Klinik*) has done a good service in calling attention again to the value of the American remedy-worm-seed oil in ascariasis (round worm). He recommends the oleum chenopodium in emulsion. Starve the child for a short period then give 3 to 5 minims of the oil every two hours during the day followed by castor oil.

Richter treats the soft chancre with moist applications of a 3 per cent. solution of aluminum acetate or a 5 per cent. solution of resorcin.

Kohnstramm (*Therap. d. Gegenwart*) insists that meat must be excluded from the diet in chronic constipation. Give eggs, butter, milk, oatmeal, honey and vegetables.

Volland finds that phthisical patients have small hearts and suffer from cardiac weakness. He recommends the hypodermatic injection of a 10 per cent. solution of camphor in oil to overcome this weakness. Two or three injections should be given every day; 0.4 grammes of camphor in 24 hours.

Bourget insists that local treatment should be instituted in all cases of diphtheria. He uses:

R.

Liq. ferri chlorid. ....  
 Alumin pulv. ....  
 Acid borici .....aa 2.  
 Glycerin .....20.

M. sig. Clean throat and tonsils and apply every 2 hours.

A few minutes after the above application the child should gargle with the following:

R.

Tinct. ratany .....  
 Tinct. guaiaci .....aa 50.

Sig. A Teaspoonful in a glass of warm water.

In most cases these applications will cure even without the use of antidiphtheritic serum.

Nargeli—Akublom obtained an excellent effect in a case of obstinate asthma in a man 70 years of age by the internal administration of pyrenol.

Edlepsin (*Berl. klin. Woch.*) recommends sodium iodid in cerebrospinal meningitis. He regards it as the most effective remedy, although other remedial measures should not be neglected in connection with the iodid treatment.

## THE MEDICAL TREATMENT OF TUBERCULOSIS OF THE UPPER AIR PASSAGES AND THE EAR.

After touching on the constitutional treatment the author discusses the local treatment of the upper air passages and finally, in taking up the ear, says that the ear is invaded insidiously, without pain. He emphasizes the necessity of preventing the tuberculous mucus from entering the Eustachian tubes. He blames the manner in which people blow their noses for the forcing of infected mucus into the tubes. A germicidal spray is advised. He states that patients seldom apply for aid until one ear has already been damaged. He advises that effort be made to empty the tube and middle ear. After rupture of the membrana tympani has taken place it is desirable to keep the canal and middle ear as dry as possible. The author believes that a comparatively dry treatment for these cases is the best and does not approve of irrigation. On every second or third day he instills a

three per cent. solution of formalin into the ear, preceded by a five per cent. solution of eucaine beta. If the general condition of the patient is improved, the patient and continued use of this treatment will eventually bring about a cure says the author.

In cases where the amount of secretion is scant and slow to form, and which dries and forms a crust, the same method of treatment should be carried out after the crusts have been removed. If left these crusts will macerate and the ear become foul underneath. The author concludes with the following paragraph on the invasion of the mastoid cells. "When the disease invades the mastoid much can be accomplished by irrigation with alphozone and the local application of ichthyol and glycerine. While I have seen a goodly number of tuberculous ears, the cases with pronounced involvement of the mastoid have been very few indeed. Not over three per cent. of my cases of mastoiditis upon which I operated were of tubercular origin."—*The Colorado Medical Journal*.

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### ACUTE MASTOIDITIS, ITS PREVENTION, DIAGNOSIS, AND TREATMENT.

This vitally important subject is one that cannot be too often discussed, especially as mastoiditis is only too frequently caused by neglect or improper treatment; which point is brought out by the writer in discussing prevention of suppurative ear affections. He, however, lays special stress on the neglect of chronic cases. I personally think that just as much stress should be laid on the lack of attention that acute cases receive. I take exception then to the opening sentence of this article which reads, "Acute mastoiditis occurs either following an acute suppurative process or as an accompaniment of a chronic process in the tympanum, the latter being more frequent on account of the general tendency to neglect cases of chronic otorrhea." Acute cases receive some sort of attention on account of such warning symptoms as pain but very often the attention is not of the proper kind and aims only to relieve the symptoms. The writer says that the best preventative treatment of a case of mastoiditis occurring during an attack of acute otitis is the proper treatment of the latter condition. He insists on making the patient a bed patient for several days; the attempt to continue business and the running around under unfavorable conditions he considers the cause of many cases becoming chronic.

He admits the difficulty of carrying out this program in many cases. It is unquestionably true that rest and quiet will hasten convalescence but unless the symptoms are severe enough to induce the patient to seek such quiet it is not always practicable to obtain it. The author advises that the treatment be started by a course of calomel followed by a saline. The essential thing he says is free drainage and he advises a paracentesis. He says it is an absurdity to say that the incision is not needed after the drum has ruptured spontaneously. He thinks that the incision should be made under general anesthesia, and must be the first step in the treatment of these diseases. That many cases get well in five or six weeks which have ruptured spontaneously without surgical intervention is no argument against it, for he believes that in these cases there will be sequelæ that will be permanently harmful and that deafness and tinnitus of a lasting quality might be averted by this early operation. It is unquestionably true that an early paracentesis would in many cases save the patient from the dangers of serious complications and severe disfigurements even when the rupture is spontaneous. Where there is bulging and pain in an imperforate tympanum I think the necessity for an immediate incision is not denied by any one. The author advises frequent douching and thinks the gauze drain of great benefit but deems it impracticable in any but hospital cases on account of the necessity for frequent changing. The cleansing of the nose with an alkaline solution is advised. The production of artificial hyperemia as a therapeutic measure in these cases is mentioned but not advocated.

Of chronic cases stress is laid on the necessity for their cure. Diseased bone should be removed, through the canal if possible if this does not suffice more radical procedures must be resorted to. It is not always an easy matter to determine if there be an involvement of the cells in connection with a chronic otitis. Pain is not always a constant symptom, temperature is of small diagnostic value: a great deal of stress is laid by the author on "the amount, and variation in the amount, of the discharge." "These remissions and exaggerations in the amount of the discharge may occur several times, and, to my mind, they offer one of our best diagnostic points, specially in adults." Swelling and edema he says are late symptoms and when they are present there is no doubt as to diagnosis. In adults this should not be waited for, in children on account of the softness of the bone these will be constant symptoms. If a case be seen within twenty-four hours after the inflammation has set in the writer approves of palliative methods. If these are useless after two or three days the question of operation must arrive and may be a difficult one but he believes that it



is conservative surgery to operate early. Comparing this operation with that for appendicitis he says, "One can not tell precisely what is present until the time of the operation in either case. In appendicitis it is considered more safe to do an exploratory operation than to take any chances, and I think the same principal holds good in dealing with a mastoiditis." After citing a case to show the difficulty of making a diagnosis in some cases the author takes up the operation and argues for a complete removal of the mastoid tip and the opening up of the cells behind the sigmoid sinus and these in the zygomatic region. He concludes with some remarks on after treatment.—*Medical Record*.

## BOOK REVIEWS

A PRACTICAL TREATISE ON MATERIA MEDICA AND THERAPEUTICS, with Especial Reference to the Clinical Application of Drugs. By John V. Shoemaker, M.D., LL.D., Professor of Materia Medica, Pharmacology, Therapeutics, and Clinical Professor of Diseases of the Skin in the Medico-Chirurgical College of Philadelphia; Physician to the Medico-Chirurgical Hospital; Member of the American Medical Association and the British Medical Association; Fellow of the Medical Society of London, etc., etc. Sixth Edition. Thoroughly Revised. (In Conformity with Latest Revised U. S. Pharmacopœia, 1905.) Royal Octavo, 1244 Pages. Extra Cloth. Price, \$5.00 net. Full Sheep. Price, \$6.00 net. F. A. Davis Company, Publishers, 1914-16 Cherry Street, Philadelphia, Pa.

The popularity of this work is well deserved. For the practicing physician it contains a mass of valuable information. The sixth edition is made to conform to the standards of the eighth revision of the U. S. Pharmacopœia and the British Pharmacopœia. The volume is very much enlarged by many additions. Part I is entirely new and consists of an excellent exposition of pharmacology, including pharmacy, prescription writing, etc. Chapters on the Roentgen-Ray, Finsen light, serumtherapy, etc., are also new.

This text book now stands second to none and can be recommended to all physicians and students.

POKER JIM, GENTLEMAN AND OTHER TALES AND SKETCHES, by G. Frank Lydston. Publishers, Monarch Book Company, Chicago.

Most of the excursions of professional men into the realms of fiction are failures. There are only a few exceptions, and the doctor's



novel usually lacks a something, difficult to define, which the professional journalist imparts to his writings.

Dr. Lydston writes very interestingly and these stories have stirring moments. The style too is very good, although the tendency here and there to use too big words in describing commonplace events is noticeable. Otherwise, these short stories compare favorably with others of modern times.

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LEA'S SERIES OF POCKET TEXT-BOOKS. DISEASES OF CHILDREN. A manual for students and practitioners by George M. Tuttle, M. D., Professor of Therapeutics, Medical Department of Washington University, St. Louis, etc. Series edited by Bern B. Gallaudet, M. D. Second edition, revised and enlarged. Illustrated with five plates in colors and monochrome. Lea Brothers and Co. Philadelphia and New York.

It must be gratifying to the author to find this work so well received that a second edition is issued so soon. Every one who has studied this hand book praises it. We add a word of appreciation. It is the best of the smaller works on pediatrics with which we are acquainted. It gives the whole subject in a concise, pleasant style and important points are not overlooked. We heartily recommend it to students and practitioners.

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## YESTERDAY AND TODAY

### TREATMENT OF ECZEMA OF THE FACE IN CHILDREN.

In studying the history of treatment as applied to facial eczema in infants one is struck with the remarkable number of different local applications which have been recommended. We quote the following from Braithwaites Retrospect (volume 38).

A fair-haired blue-eyed child, aged two years was admitted with that so common and so troublesome form of eczema in which the whole face and scalp are involved, but the rest of the surface free. It had suffered since the age of six months, but excepting the irritation of the eruption its general health was not interfered with. Mr. Startin ordered as follows:—

Misturæ potassii iodid: oz. j. aq. oz. v. capt. dr. j. ter in die.

The surface to be washed with the yolk of egg and water, and smeared with the nitric oxide of mercury ointment. Rapid improvement ensued in this individual case; and it may be taken as a fair il-

lustration of the treatment usually adopted. In obstinate cases the compound iodide mixture, which contains arsenic, is often employed.

The formulae for the above-mentioned preparation are:—of the mixture—a drachm of iodine, an ounce of liquor potassæ, and a pint of distilled water, each drachm containing half a grain of iodine. Of the liniment—olive oil, two ounces; lard, two ounces; powdered nitric oxide of mercury, a drachm; oil of bitter almonds, half a scruple; and glycerine, oz. j.—*Med. Times and Gazette, September 4, 1858, p. 245.*

This shows that we have forgotten much that might be useful. It was Erasmus Wilson, if we remember correctly, who insisted that eczema was most successfully treated by giving calomel internally and applying oxid of zinc ointment externally. In spite of a great number of trials this treatment has not been superseded by anything better.

Practitioners are so apt to forget that infantile eczema is usually a self limited disease, that under any reasonable treatment the disease will ultimately get well, that there are periods of exacerbation brought on by no obvious cause and in spite of treatment; that any form of treatment is purely symptomatic; and, finally, that the substances ingested or the intestinal-disturbance bears no positive and constant relation to the eruption.

We must, therefore, be content to protect and soothe the inflamed skin and wait. This waiting is often very trying to the anxious mother who is disposed to try something else or rather some other physician, a difficulty which the practitioner can not always overcome.

It is a great mistake, however, to keep trying one prescription after another with the hope that something will be found which will promptly cure. Do not mistake symptomatic for curative treatment even in diseases of the skin.

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### SOME OLD FAVORITE PRESCRIPTIONS.

Have we really improved some of our prescriptions? Fifty years ago (1837) the *American Medical Monthly* contained an article by Horace Green in which he gives selections from favorite prescriptions of living American practitioners. We quote (*Braithwaite's Retrospect*).

“Narcotics and Sedatives.—As palliatives in the treatment of all forms of neuralgia, the narcotics and sedatives are very generally resorted to by practitioners, especially during the paroxysms of the dis-

ease. When appropriately combined, their efficacy in these affections is more prompt and decided than when separately administered.

- R. Extracti hyoscyami, dr. ss.; morphine sulphatis, gr. iij.; strychnine, gr. ij.; capsici pulv., dr. ss.; zinci sulphatis, gr. xv. M. Fiat massa; in pilulæ xxx. dividenda capiat. Unam ter quaterve in die.

In neuralgia, unattended by organic lesions, the above pills, exhibited every sixth or fourth hour, according to circumstances, will be found to be an excellent remedy. They have proved especially serviceable in the form of neuralgia in which the divisions of the fifth pair of nerves are so frequently involved. Not only in facial neuralgia, but in all cases where the disease has been caused by malaria, this combination may be administered, with confidence that the result will be favourable. The valerianate of iron, conjoined with the extract of hyoscyamus, is an excellent anti-spasmodic and tonic, and may be employed with great advantage for the treatment of chorea, and all the neuralgic affections of anæmic and debilitated females:

- R. Extracti hyoscyami, dr. ss.; ferri valerianatis, dr. i. Fiat massa, et in pilulas triginti dividendas; quarum date unam ter in die.

The valerianate of iron and the valerianate of zinc are two highly valuable remedies; and, were the therapeutic powers of these medicines better understood by the profession, they would be much more extensively employed than they now are for the treatment of disease. The valerianate of zinc, Dr. Neligan says, is "one of the most valuable modern additions to the *Materia Medica*."

- R. Extracti hyoscyami Scr. iss.; zinci valerianatis, dr. j.; Fiat pilulæ xxx. Capiat unam bis ter in die.

The above pill is a valuable remedy in the treatment of facial neuralgia; and, indeed, is equally serviceable in all the nervous and neuralgic affections for which the valerianate of iron has been advised.

- R. Extracti belladonnæ gra. viij.; camphori pulv., dr. j.; quinine disulphatis, dr. ij. Misce; Fiat pilulæ triginti.

These pills are very effective in the treatment of dysmenorrhœa. One pill may be exhibited every hour or two hours till the pain ceases. In females of a nervous temperament, when painful menstruation occurs, independent of organic lesions, these pills administered as above directed, seldom fail of affording relief. In those cases of dysmenorrhœa where a tonic is not particularly indicated, the following are more appropriate, and are equally efficacious:—

- R. Extracti belladonnæ, gr. viij.; ipecacuanhæ pulv. gr. x.: zinci sulphatis, dr. ss. Misce; Fiat pilulæ xxx., quarum capiat unam quaque hora, donec leniatur dolor.

The following pills are highly recommended by an intelligent and experienced practitioner in the treatment of leucorrhœa occurring in anæmic and nervous females:—

- R. Extracti hyoseyami, dr. i.; argenti nitratis, gra. x.; cantharidis pulv., gr. xii.; quiniæ disulphatis, dr. ij. Fiat pilulæ xl. Sumat unam mane et nocte.

The same physician advises the subjoined formula as a combination that may be employed with great advantage as a diuretic and alterative in the treatment of cellular dropsy:—

- R. Extracti conii, scr. j.; cantharidis pulv., scr. ij.; hydrarg. submur, scr. ss.; ipecacuanhæ pulv., dr. j. Misce; Fiat massa: in pilulæ xl. dividenda. Cujus capiat unam ter quaterve in die.

A combination of the extract of belladonna with quinine has been employed very efficaciously in the treatment of gastralgia.

- R. Extracti belladonnæ, scr. ss.; quiniæ disulphatis, dr. j. M. Fiat pilulæ xxx. Sumat unam ter in die.

In that variety of gastralgia which is not unfrequently occurring in the course of chronic gastritis, we have derived the greatest benefit from the employment of the following pills:—

- R. Extracti hyoseyami, dr. j.; argenti nitratis, gra. x.; bismuthi subnitratis, dr. iss. Fiant pilulæ xl.; quarum sumatur una mane ac nocte.

The nitrate of silver, combined with some one of the sedative extracts, may be employed advantageously in the treatment of almost all chronic gastric affections. In cases of obstinate chronic gastritis, or long-continued dyspepsia, we have found the following pills more efficacious than any other single remedy. They should be continued for several weeks:—

- R. Extracti conii, *vel* lupuli, dr. j.; argenti nitratis, gr. x.; capsici pulv., quiniæ disulphatis, aa. dr. ij. Misce; Fiat massa, in pilulas xl. dividenda. Capiat unam bis terve in die.

There is a troublesome and often an obstinate form of gastric irritability, denominated by the French *estomac glaireuse*, in which the patient occasionally ejects by eructation, a tasteless watery fluid, and which is accompanied often by a severe burning pain in the epigastric region. This variety of the disease is arrested with great cer-

tainty by the exhibition of either the preceding or the following pills:—

R. Extracti lupulinae, scr. j.; argenti nitratis, gr. x.; bismuthi subnitratis, dr. iss.; quinae disulphatis dr. ij. Fiat pilulae xl.; ejus sumatur unam bis terve in die.

In all forms of chronic disease attended with acute pain, as well as in all painful nervous affections, in the treatment of which, for any cause, full doses of opium are contra-indicated, the following combination may be administered with great advantage:—

R. Extracti hyoscyami, gr. xv.; extracti stramonii, gr. iv.; extracti humuli, scr. j.; morphiae sulphatis, gr. iss. Misce. Divide in pilulas xxx.; quarum capiat unam omni semi-hora, donec leniatur dolor.

Of the therapeutic effects of muriate of ammonia, when internally administered, but little is known, as in this manner it is but rarely employed in this country. With the German physicians it has obtained a high reputation as a good alterative, and a promoter of healthy secretions in chronic disease of the mucous and serous tissues. It not only promotes the mucous secretions, says Dr. Sunderlin, but the cutaneous exhalations, and improves also nutrition and assimilation. Combined with a sedative and narcotic, we have found it highly valuable in allaying irritation, and in promoting expectoration, in the early stage of phthisis:—

R. Ammoniae muriatis, dr. ss.; opii pulv., gr. x. digitalis pulv., scillae pulv., aa. Ej. Misce. Divide in pilulas triginti. Sumat unam quaque sexta hora.

Sleeplessness, occurring in hypochondria, hysteria, and, indeed, in all nervous affections, may be overcome with great certainty by the administration of the following pills:—

R. Assafoetidae, dr. j.; morphiae sulphatis, gr. iij. M. Fiant pilulae triginti, quarum exhibe unam vel duae hora decubitus.

The above pills—two to four exhibited daily—are very efficacious in arresting the dry cough which is occasionally consequent on disordered menstruation in nervous females.—*American Medical Monthly*.—*Edinburgh Med. Journal*, December, 1857, p. 535.

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**ORIGINAL ARTICLES**

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**OPERATIONS FOR THE CURE OF CHRONIC SUPPURATIVE OTITIS MEDIA OTHER THAN THE RADICAL MASTOID.**

BY SELDIN SPENCER, M. D., ST. LOUIS, MO.

Under this subject we must deal with the surgical treatment alone, and while I do not wish to touch at all on other methods I desire, in discussing indications for surgical interference to insist on the necessity of considering the best needs of our patient, and for a careful and thoughtful seeking for that golden mean which lies between a timid conservatism and a selfish radicalism. Where men are impelled by other than pure motives it is on the one hand by a fear to assume responsibility, or by a love for ease, and on the other hand by the temptation to obtain a large fee or to make a grand stand play. If it were the golden rule that led us I am sure that it would lead us nearer to the golden mean.

When we have concluded that the case with which we are dealing belongs to that class known as chronic suppurative otitis media we are only approaching our diagnosis, and much remains to be done. The line of treatment whether conservative or radical must be dependent on our findings, and our diagnosis is only complete when we have determined the extent of the involvement.

Suppurative diseases of the middle ear are primarily divided into acute and chronic affections. This classification is but an arbitrary one, the dividing line not being well defined. In seeking to determine with which class of cases we are dealing we must not rely too much on the history obtained from the patient. The division of acute and chronic cases according to duration is unsatisfactory and questioning, at whatever length, can never make unnecessary the use of the head-mirror the probe and the auscultation tube.



We may classify chronic suppurative affections of the middle ear into those with bone involvement and those without bone involvement. With those cases where the bone is not involved we can dispense for the purpose of this paper, for such operations as might be required are too minor to occupy our time in this discussion.

In considering a chronic suppurative case then we become immediately interested in determining if the bone is involved and to what extent. Our first aid is the appearance of the tympanum and its environment. I am supposing of course that the verbal examination has eliminated such subjective symptoms as would lead us to believe that more radical procedures were necessary. We need say very little about the examination of the post-auricular surface, for any departure from the normal in this locality associated with a chronic suppurative otitis media would call for the radical mastoid operation if it had any surgical bearing on the case. The same might be said of the external auditory canal for a swelling of the posterior canal wall or a sinus there would indicate the necessity for radical treatment. Of course in both of these areas we must eliminate superficial affections.

Our examination of the tympanum must be made under a strong light. We must first remove all detritus getting the parts as clean and free from all matter as possible, and then there should be made a most careful inspection. Any granulations or polypi that obstruct our view and hinder the examination should be removed. The location and extent of the perforation must be determined. A perforation in Schrapnell's membrane would indicate that the attic was affected. If the opening is anterior it is probable that the malleus is involved, if posterior the incus, if at a point near their junction probably both bones, if the perforation extends to the periphery there is very sure to be caries of the bony wall of the attic. In connection with a perforation in Schrapnell's membrane there may be a perforation in the membrana vibrans, or without involvement of the flaccid membrane the location of the opening in the vibrating membrane has also an important bearing on caries of the ossicles. If the perforation is in the upper posterior quadrant it would indicate caries of the long process of the incus. When a great kidney shaped perforation exists through which the hammer's handle protrudes from above, the handle itself is carious. Where there is a large defect with granulations in the upper posterior portion, or where a drop of pus persists in this locality even after it has been mopped off, there is sure to be caries of the incus. The diagnosis made from the appearance of the middle ear may be confirmed by the probe which enables us readily to feel dead or exposed bone.

If, having located the trouble so far as we are able, we find no symptoms which would indicate that the radical mastoid operation is absolutely necessary; such for example as, threatening symptoms pointing to intracranial complications, continued headache referred to the ear, nausea, vomiting vertigo or frequent attacks of mastoiditis with tenderness, and if no such symptom as large masses of coilesteatomata in the attic lead us to believe that further delay is inexpedient, we should at once turn our thoughts to more conservative methods. After simple non-surgical means have failed we should try less radical surgery in well selected cases, being careful not to promise too much and thus lose the confidence of the patient, if later on it is found necessary to advise a second operation.

As to the *operations*, other than the radical mastoid, for the relief of chronic suppurative otitis media, of the different methods advised, I shall mention four principal ones. The technic which I describe will be such as I am myself familiar with. To mention the different variations would make too voluminous a work. We shall discuss, the simple mastoid, the simple Stacke operation, the removal of the malleus and incus, called ossiculectomy, and the removal of the outer attic wall through the external auditory meatus in conjunction with the ossiculectomy.

I think that we can dispense with a lengthy discussion of the simple mastoid operation in this class of cases for if so serious an operation is called for I can see no very good argument against continuing the operation into the radical and thus getting rid of as much diseased bone as possible and obtaining free drainage and good access to all parts of the cavity.

We shall first then discuss the simple Stacke operation. In arguing for this method of procedure Dr. Alexander Randall of Philadelphia says, after acknowledging that the radical is often necessary but wishing to keep its dangers before us, "Antisepsis in such work can never be complete and the laying open of healthy bone for the absorption of septic matter cannot always be harmless." He says further, "without exaggerating the dangers of serious complications we know too well their reality: but we also know that mere anesthesia has its quota of victims, that the facial nerve is sometimes paralyzed by the operator and that septic conditions not previously recognized if present sometimes flare up into fatal prominence immediately after operations." This argument against the too frequent use of the radical, and an impatience in turning to it, holds good for any conservative methods that may be effective. I firmly believe that many cases of intracranial complications are induced by too extensive operations even at the hands of excellent surgeons.

The Stacke operation is appropriate in those cases where there seems to be involvement of the attic and antrum. It may be taken up in place of the radical when the sinus lies very far forward or when the antrum is small and hard to locate.

The operation must be performed under general anesthesia; ordinary surgical precautions being observed. The initial incision in the soft parts is made 5 mm back of the post-auricular groove in the form of a semilunar line extending from the tip of the mastoid process to a point above and in front of the ear as far forward as expedient.

The bony surface anterior to this incision is now laid bare with the periosteal elevator to the root of the zygomatic process in front and in the meatus down to the drum membrane. The soft parts are well freed from the bony canal wall and are drawn completely forward. Posterior to the incision the soft parts should be left adherent, as the incision in the case of the simple Stacke may be sutured. An assistant in addition to the anesthetist is necessary to hand instruments and sponges. Sponges will be constantly needed and bleeding points had best be tied. After the cavity is well exposed the ossicles, if present may be removed as in the simple ossiculectomy operation. The chiselling is begun from within and proceeds outward, always starting the chisel at a wide angle turning gradually and using short, sharp blows. Stacke has invented a protector to guard such important structures as the facial nerve and the semi-circular canals. This or a sound should be continually used and every splinter of bone should be removed as it falls. The opening is thus carefully enlarged until the antrum and attic are well exposed all carious spots should be curetted and the cavity gotten in as clean a condition as possible. The final step in the operation will be the plastic which consists in splitting the canal wall and adapting it to the new cavity. If the cartilage is dissected out this can be better accomplished. The external opening is now sutured and the dressing carried out through the external auditory canal. I prefer to use small pieces of iodoform gauze and pack rather snugly. In a large majority of the cases a speedy healing will be the result. If the radical is later necessary we have gained by what we have done in this operation both in lessening the extent of the second operation and in shortening the time of its healing.

Having considered operations which require a post-auricular incision we shall now discuss those operations which are performed through the external auditory meatus.

First the simple removal of the two larger ossicles must be dealt

with. I consider this a most important operation, as it will answer in a great number of cases and the patient suffers comparatively little inconvenience and danger. There is quite a difference of opinion as to the efficacy of this operation. Dr. Randall of Philadelphia prefers to use the Stacke when the radical is not necessary if any surgical interference is called for. He believes that the majority of cases cured by ossiculectomy would have gotten well by more conservative methods. Dr. Edward B. Dench has a better opinion of the results and gives the following statistics of 92 cases operated on by himself. Fifty-three cured, 25 improved, 2 unimproved and 12 result unknown. He says that in most of these cases the hearing was improved and that he fails to recall a single instance in which the hearing was made worse. Dr. R. Lake reports 50 cases, 42 of which were cured, 3 had temporary relapses and the other eight were lost track of. Hearing was improved in twenty-one of these cases. He does not mention if hearing was injured in any case.

Dr. R. Lake states the indications for this operation briefly as follows:—

1. Intractable disease of the attic with a perforation in Schrapnell's membrane, especially if accompanied by definite caries or deafness.

2. Intractable disease with perforation in the post. sup. quad.

3. Intractable disease with considerable destruction of the membrane in any other situation.

4. Residual deafness, without nerve deafness, after suppuration. In the recent work on aural surgery by Dr. J. C. Blake and Dr. R. O. Reik, the indications for this operation are stated.—“In event of considerable necrosis of the two larger ossicles, or when their presence presents an obstructive barrier to drainage from the epitympanum and bars access to the diseased parts their removal is indicated.”

Dr. G. L. Richards says,—“It seems to me that the operation of ossiculectomy ought to be chosen only in those cases in which, in all probability, the suppurative process is limited to the ossicles and their immediate vicinity; and in which colesteatomatous masses are not present.” I have quoted at some length because of the range of opinion that exists in aural surgery. My own experience has fully justified me in making frequent use of this operation in appropriate cases, and doing it as I do under local anesthesia, with the inconvenience and danger to the patient at a minimum, I think that very few of the adverse arguments will stand. Dr. Richards asserts that this operation has its “disagreeable consequences” as well as the more serious ones, and among other things he mentions, facial paralysis



and vertigo and nausea sometimes lasting. He further states that "the time a person has to remain away from his work is from a week to ten days." I can not agree with him on any of these points. In a series of over one hundred cases I have had one temporary facial paralysis which lasted about four weeks. It was one of my earliest cases and one which I performed under general anesthesia. (The first operation of the kind that I had done in the recumbent position.) I can also recall one case where the dizziness was unusually disagreeable, and alarming to the patient, but it was in a case where I had advised the radical mastoid but the patient held out against the use of chloroform, and being very ignorant and nervous was difficult to manage. Alarmed at the dizziness following the ossiculectomy he submitted to the radical operation. As he obtained a perfect result from this, he can thank the ossiculectomy for it. This was a new use for the operation, an inducement to more radical procedures. The worst accident that I had was the unintentional removal of the stapes. I am unable to state with what result as the patient, a clinic patient, ceased coming.

Before taking up the operation I wish to say one word in regard to the effect on the hearing. I can not say with Dr. Dench that I can't recall a single case in which the hearing was made worse for I can recall just one such case. In most cases the hearing was improved in some markedly so, in many cases there was no change. But I feel justified in reassuring a patient on this point and telling them that the chance of their hearing being injured is very very small indeed. While in all probability, if there is any change at all, it will be for the better.

The first subject for consideration, under method of procedure, is anesthesia. In the clinics of Europe I believe that general anesthesia is most commonly employed in this operation, and I find that it is very generally advised in this country. I have employed local anesthesia in about ninety per cent. of my cases and have had good success with it. The fear of the instruments will so affect some patients as young children and highly nervous persons that a general anesthetic must be resorted to. I believe that my percentage will continue to be about as I have stated it, and that in 9 cases out of 10 I shall be able to dispense with general anesthesia. It is hardly necessary to dwell on the advantages of local anesthesia. To the patient it means the obviation of inconveniences and dangers, to the physician it affords a better position in which to work. Should the attempt with local anesthesia prove futile we can resort to general anesthesia and no harm has been done.

One reason for former failures in using local anesthesia has been the inefficiency of the application used. Cocaine is not sufficiently effective in these cases. I have seen hypodermic injection advised but I do not find this necessary. A combination (I do not know whose formula it is) of equal parts of menthol, carbolic acid and cocaine enables to use a 33 1-3 per cent. solution of cocaine without danger or inconvenience to the patient. I have never had any untoward results from the use of this, and such cases of syncope that I have had have not been in much greater proportion than in severe ear work where cocaine was not used at all. I only recall two or three such cases.

For the operation under local anesthesia the surgeon and patient should be seated in the appropriate position. A strong artificial light is advisable, if indeed it is not absolutely essential. Of course all instruments to be used must be carefully sterilized and the external auditory meatus and auricle should be thoroughly cleansed. I am in the habit of using absolute alcohol in the middle and over the auricle, afterward washing out with a 1-3000 bichloride solution. After this I dry thoroughly and then pour in a sterile solution of adrenalin chloride 1-1000, and let this remain for a few minutes. This is then poured out, the middle ear again dried, the local anesthesia applied either by mopping, or dropping in a few drops to remain five minutes or so. It is a great help to have an assistant, to hand sponges and instruments, but it is not absolutely necessary.

As large a speculum as possible must be used, the kind is a matter of choice, I prefer a short Wilde's speculum. For the cutting of the membrane a paracentesis knife is employed. The incision is made through the membrana tympani, in order to free the hammer and to permit the entrance of the tenetome. I usually make the incision to surround the visible portion of the hammer, thus freeing it from its attachment to the drum. As soon as this incision has been made the tenetome should be introduced into the uppermost portion of that part of the incision behind the hammer, to sever the connection of the tensor tympani. Next all adhesions and other attachments should be severed and the hammer pulled forward and loosened with the tenetome sound. For the removal of the hammer a Noyes forcep is well adapted, the bone being grasped just above the short process. By a rotary movement the hammer is drawn downward and outward. The extraction of the hammer is comparatively easy, it is possible however, to break the hammer off at the neck if it is grasped too low down. Several ways of removing the incus are advised, but my results fully justify me in using Zeroni's incus hook. The instrument



is introduced in very much the same way as was the tenetome. It is directed to rest where the head of the hammer was, the instrument is then turned and made to rotate the incus out of its position, drawing it downward and forward. The tenetome is not needed to sever the incudo-stapedial articulation. If the incus is not found *every* effort should be made to obtain it, and where such a search is necessary other hooks must be resorted to. It will not always be found, having been displayed by the procedure, or destroyed by the suppuration.

All remaining granulations should be removed and the attic may be curetted. Dr. Blakes' wire ring curettes are excellent instruments for this purpose. After drying, I simply dress with a strip of iodoform gauze.

The last operative procedure that I shall mention is the carrying out further the operation just described by removing the posterior portion of the outer tympanic wall through the external auditory meatus. This may be done by biting through the bone and soft tissues with appropriate forceps, and I have done this under local anesthesia. It is more satisfactory though to do this work under general anesthesia. Some advise the use of a chisel for this work and a suitable chisel has been devised. A stout curette is employed by some, but this must be used with care. The soft tissue may be conserved and utilized as a flap, in which case general narcosis is necessary. An incision is made from within outward on the posterior superior wall and the flaps are peeled back. After the wall has been removed, the flaps are replaced.

In conclusion I wish to remind you that my purpose has been to show that these operations are not suitable to all cases and do not supplant the radical mastoid.

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## CEREBRAL SYPHILIS WITH COMA. RECOVERY.

BY M. J. LIPPE, M. D., ST. LOUIS.

The unusual severity of the symptoms of this case, during the course of which coma of a profound type lasting part of one day and semi coma of twelve days duration, with bladder and bowel function lost, together with bed sores over sacrum and over one heel finally yielding to active treatment leaves me to report this case.

On January 4th, was called to see S. H., forty-three years of age, colored, a widow and a waitress by occupation.

No history obtainable from patient as she is in a state of hebetude and answers only in monosyllables. From her sister, I gathered the following information: Patient has had atrocious headaches, worse at

night for the past six weeks, her eyesight has been getting poorer during this time, in fact she can see very little. Would go to sleep standing and frequently fall. Right hand is weaker, drags right leg, speech thick, memory poor, sensation not up to normal.

Removed to Provident Hospital on seventh; has been taking bichloride of mercury gr. 1-10 and potassium iodide gr. 20 three times daily by mouth. No improvement, in fact condition is much worse.

On admission to hospital patient still complains of severe headache, temperature  $100^{\circ}$ , pulse 84, resp. 20, involuntary micturition bowel moved after enema was given gr. 1-10 of bichloride hypodermically in addition to gr. 1-3 by mouth, and sixty grains of potassium iodide. On eighth, received gr. 1-3 of bichloride hypodermically, also 1-3 by mouth in addition to ninety grains of potassium iodide during twenty-four hours, patient in semi-stupor most of the time.

On ninth same amount of bichloride and one hundred and twenty grains of potassium iodide. Patient is menstruating, stupor so profound in afternoon that she could not be roused, involuntary micturition, temperature  $100^{\circ}$ , pulse 92, resp. 26 in evening.

On tenth, gr.  $\frac{1}{2}$  of bichloride hypodermically 120 grains of potassium iodide by mouth, patient drowsy, can be roused, but swallows with difficulty. Resonance on either side spine near base of lung diminished.

January 11. Bichloride gr.  $\frac{1}{2}$  hypodermically, potassium iodide one hundred and fifty grains by mouth, digitalin gr. 1-60 every four hours. At 8 p. m. temperature  $101^{\circ}$ , pulse 120, resp. 32, profuse perspiration. Catheterization necessary every six hours, bowels moved involuntarily, deglutition still difficult pulse is weak.

January 12. Bichloride gr.  $\frac{1}{2}$  under the skin, potassium iodide gr. 165 by mouth, digitalin gr. 1-60 every four hours, strychnin sulphate gr. 1-30 every six hours, hypodermically, temperature  $102^{\circ}$ , pulse 130 in the evening.

January 13. Same medication condition about the same temp.  $100\ 2-10^{\circ}$ , pulse 124, resp. 30.

January 14. Same medication, bed sore appearing over sacrum, in spite of frequent change of position, alcohol sponging, etc.

January 15 and 16. Same bed sore suppurating.

January 17. Patient mildly delirious during the night and tried to get out of bed. Bowel and bladder evacuated involuntarily same medication.

January 18. Patient's mind is clearing up, she is aware for the first time in twelve days that she is not at home, and asked how she got to the hospital, as she remembers nothing of her being brought here. Voided urine voluntarily, same medication.

January 19. Bichloride gr.  $\frac{1}{2}$  potassium iodide, gr. 165 and strychnine gr. 1-10 by mouth. Over right heel, black, dry gangrenous, area larger than a silver dollar, noticed for first time, is not painful, calomel applied. Patient propped up in bed, cannot call her son by name.

January 22. Sat up in chair, vision improved, can see to count fingers very well. Same medication.

February 1. Has fair control over bladder and bowel, talks foolishly at times but is improving mentally.

February 10. Can walk.

February 16. Left hospital.

Menstruation did not reappear for four months, during this time patient has improved in every way.

One year later, February 16, '07. Patient is able to walk without tiring, does not drag limb, grasp of left hand is much better, reflexes still exaggerated, can do house-work very well, but gets excited more readily than she did before this trouble.

Cerebral syphilis, syphilitic arteritis or a gumma producing symptom of such grave import usually ends in death or imbecility and I ascribe the remarkable result in this case to the use of mercury hypodermically together with large doses of potassium iodide.

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## TREATMENT OF GONORRHOEAL OPHTHALMIA NEONATORUM.

BY W. A. SHOEMAKER, M. D., ST. LOUIS.

The most successful treatment of this disease is the prophylactic treatment. This includes antepartum antiseptic treatment of the parturient canal and postpartum treatment of the lids and conjunctival sacs. The Crede method has been deservedly popular for some years as it has reduced the number of cases of this trouble amazingly. The 2 per cent. solution of silver nitrate is, unfortunately, very irritating to many eyes and this fact doubtless has prevented its general use. Since the introduction of the organic salts of silver, protargol and argyrol, it has been found that solutions of these salts are quite as effective as the nitrate of silver and are practically unirritating, especially the argyrol solution. There seems no good reason, therefore, why several drops of a 20 to 30 per cent. solution of one of these salts should not be instilled into the conjunctival sacs of each infant, by the attending physician, immediately after its birth. Preceding this all secretions should be washed from the eyes with sterile water or a mild

antiseptic solution, and the conjunctival sac gently flushed with the same solution.

The first symptoms of the disease usually appear any where from several hours after birth to the fourth day. These are excessive lachrymation, photophobia, and a deep red conjunctiva, which has a velvety appearance. The child usually becomes restless and may develop some fever. If proper treatment is promptly instituted upon the first appearance of these symptoms the disease can, as a rule, be effectually checked and it will run a much shorter course than if treatment is delayed until after infiltration and suppuration have been established. For this reason the eyes should be closely watched the first four days by the attending physician. The treatment giving the best results in the hands of most writers on the subject is the employment of argyrol or protargol in solution varying from 10 to 50 per cent. Miles Standish recommends the use of 20 per cent. protargol or 25 per cent. argyrol instilled freely between the lids at intervals of one to four hours. Until recently much stress has been laid on keeping the secretion carefully washed out of the conjunctival sac. Lately Bruns' "immersion treatment" has gained favor with some. The originator of this treatment, Henry Dickson Bruns, in the *New Orleans Med. and Surg. Jour.*, November, 1905, says of it: "As soon as the case presents itself the free instillation of a 10 per cent. solution of argyrol every fifteen minutes day and night until suppuration has ceased is ordered. No violence is required to do this. To the patient or his attendants is demonstrated how to draw the lids carefully and gently apart and allow the solution to fall into the conjunctival sac from a medicine dropper. The excess of fluid and the pus carried out with it are wiped from the face with bits of moist absorbent cotton. No other collyrium is used and no further effort to remove pus from the conjunctiva is made. Under this immersion treatment. . . pus formation is checked and the case removed from the dangerous category in from 48 to 72 hours."

Where the case is not seen until after ulceration of the cornea has taken place, or where this complication develops in spite of treatment, in addition to that treatment of the conjunctivitis such measures should be instituted as would be indicated in the management of corneal ulcers under other circumstances. In the later stages of the disease, where the conjunctiva is much thickened, the organic silver salt may be replaced by the nitrate in  $\frac{1}{4}$  to 12 per cent. Solutions brushed lightly over the surface of the conjunctiva once daily, as its astringent properties are valuable in this stage.

## LEADING ARTICLES

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### THE SURGERY OF MAMMARY CANCER.

As the years come and go surgeons become more and more appreciative of the importance and pressing necessity of performing a complete and thorough operation in every case of mammary cancer, no matter how short the duration of the growth has been. Experience has at last taught us the impressive fact that it is absolutely impossible to say in any given case that the axillary glands are not involved, until the parts have been exposed and the tissues examined microscopically. This finding has rendered it necessary that the axilla be exposed and the glands and fat excised in all cases of mammary cancer.

Previous to the presentation of the thorough technic by Halsted our operative technic was indeed quite at fault, and was sufficient to explain many of our failures. Another factor in the securing of better results has been the earlier resort to surgery. Practitioners are awakening to the importance of advising and insisting upon the prompt removal of these growths at the earliest possible moment. It is also a fact that the laity are becoming alive to the fact that the apparently insignificant tumor will, unless removed early, result in death.

At present there is no operative mortality—*there should be none*. The contention of Banks and others that a woman should not consider herself cured of a cancer of the breast even though she is alive and well eighteen years or more after operation is based upon the fact that a patient may die from the disease even though she has been free from all clinical manifestations of the affection during that lapse of time, and later die from the disease. This is indeed a very impressive fact. In passing it may be stated that practitioners now realize that a cancer does not "recur." When the disease apparently "recurs" it simply shows that the disease was not completely removed at the primary operation—nothing more. The *surgeon's* knife DID NOT EXCISE ALL OF THE DISEASED LYMPH CHANNELS AND OTHER INFECTED TISSUE, hence the malignant process has simply CONTINUED to wend its way along the lymph channels.

By means of the complete Halsted operation the dangers of leaving diseased tissues behind have been reduced to a minimum. It is



nothing more than right to acknowledge the fact that Halsted does not deserve the whole credit for the present day complete technic bearing his name. It is well to recall the painstaking work of Sir Mitchell Banks, Rotter, and others.

The Halsted technic is too well known to need comment. The extensive and valuable studies of Handley have shown that cancer of the breast spreads primarily in the parietes along the deep fascia, and not along the skin; hence it appears to be unnecessary in all but exceptional cases to remove such a large area of skin as to prevent complete suturing of the wound. Handley thinks that as a rule it suffices to remove a circular area of skin centered on the primary growth and from 4 to 5 inches in diameter. The incision advised by Handley consists of three parts: 1. A ring incision, as practiced by Mitchell Banks, from 4 to 5 inches in diameter, accurately centered on the growth and surrounding it at a safe distance, slightly tailing off into part 2 above, and into part 3 below. 2. A curvilinear incision for giving access to the axilla. The axilla is opened by turning forward a flap consisting of skin and a thin layer of subcutaneous fat, whose base lies along the anterior axillary fold. The axillary incision begins at the lower edge of the pectoralis major, close to its insertion; it ends, also at the lower edge of the pectoralis major, by joining the annular incision. It crosses the base of the axilla, and marks out an almost semicircular flap of skin whose convexity reaches back nearly to the edge of the latissimus dorsi. It affords perfect access coming off from the lower and inner part of the annular incision and passing downward for about two inches along the linea alba. Its object is to give access for the removal of the deep fascia over the upper part of the abdominal wall. Without this latter incision this important step in the operation can not be carried out. Usually it will be found most convenient to suture Handley's incision and will be in a triradiate form. Handley claims that a rectilinear scar never follows, nor does the scar ever lie along the anterior axillary fold; furthermore, the incision does not remove any presumably healthy skin. The pull of the arm being at right angles to the direction of the scar, the cicatrix more readily becomes mobile on the chest.

Murphy attempts to prevent axillary and pectoral cicatrices following the removal of the breast, axillary glands, and connective tissue in these cases. He says:

"An effective dissection of the axilla can not be made without exposing the axillary vein, axillary artery and brachial plexus, and removing all of the lymphatic chains, glands and fatty tissue. This exposure *per se* involves no particular risk, but if these structures be

allowed to adhere to the chest wall, or skin, or are permitted to be surrounded by newly formed connective tissue, there is always a neuritis (neuralgia), with venous and occasionally arterial, stasis. The lymphedema, which is much more rare than is generally believed, is the result of the removal of the lymph channels. The evil results of the axillary excavation are, and have been, in our clinic, readily overcome by using a portion of the pectoralis major to cover these structures, or all of the pectoralis minor, or a portion of the latissimus dorsi, with its fatty covering, or even the subscapularis. Any one of these muscles which extend from the chest and are attached to the upper end of the humerus may be used. The best muscle to cover the important structures of the axilla is the lower part of the pectoralis major muscle. Its aponeurosis should be removed with the breast, as the aponeurosis, and not the muscle, carries the lymphatics, in which metastasis occurs. The muscle is then cut from its costal attachments for a width of 2 to 2½ inches, well toward the sternal margin, and split outward parallel to its fibres, allowing the humeral attachment to remain. The remaining portion of the pectoralis major, its fascia, the pectoralis minor and its fascia, may or may not be removed, depending upon the operator's predilection in this matter. When the dissection of the axilla is complete the pectoral flap is drawn across the nerve, artery and vein, and fixed at the apex of the axilla, covering the anterior and inferior surface of these structures. Three or four stitches suffice for the purpose. If the latissimus dorsi is used it should be divided well down, two inches of its margin and fatty tissue freed and the muscle split upwards towards the humeral attachment, the flap drawn forward and upward and attached in the same manner as the pectoralis, to cover the axillary structures.

"When the wound is closed the arm is dressed at right angles to the body. It is held in this position by an axillary cast extending over the chest and out over the arm to the elbow. \* \* \* \* The evil results of fixation are due in a degree to binding the arm to the chest wall immediately after operation."

Very recently Jackson has presented a new, and, I may add, an apparently excellent lecture for breast amputation. He begins the skin incision at a point about 1½ inches below the middle of the clavicle, in the sulcus, marking the interval between the deltoid and the pectoralis major muscles. From this point the incision is carried in a straight line along the sulcus, parallel to the inner border of the deltoid muscle, until it reaches the lower border of the pectoral fold as it terminates in the arm. This straight incision is

all that is made in this early step of the operation, but for the sake of clearness the complete incision will be outlined.

From the lower border of the first incision the knife is carried along the under margin of the pectoral fold to the chest, at a point which corresponds, as a rule, with the lower border of the mamma itself. The remaining portion of the incision is made in the form of an ellipse about the nipple, with its long axis nearly vertical, or, rather, obliquely, from above downward and outward to the outer quadrant of the breast. This ellipse is so planned as practically to make its outer curve parallel with the line of the first incision made, and thus to present, when completed, a quadrilateral flap with its base upward and entirely free below. This incision is, of course, carried through the skin and fascia down to the underlying muscular structures.

Concerning the advantages of the new technic Jackson says:

"The flap forms a covering for the chest defect, as a rule without any tension, and thus almost entirely obviates the necessity of grafting.

"The drawings of the skin up to the arm does away with the axillary fossa.

"The ligation of all vessels at their nearest point of origin does away with the use of a large number of hemostatic forceps, which causes loss of time, etc.

"The most noticeable feature to the onlooker, when the operation is completed as described, probably is the marked absence of hemorrhage, so that it can almost be called a bloodless operation.

"The entire technical portion of the operation is completed before the chest is exposed by removal of the breast. \* \* As soon as the breast is removed the wound is ready to be closed."

In some of the recent cases operated upon by Dr. Mudd it was found impossible to resort to Jackson's technic, owing to the site and character of the growth. In suitable cases Dr. Mudd has found the technic quite satisfactory. If Handley's contentions as to the necessity of removing a portion of the deep fascia of the parieties are correct—and they certainly seem to be so, it is obvious that the presented technic can be so modified.

In conclusion we may then safely say that an early and complete radical removal of all the diseased structures is without mortality and offers these patients the every chance of recovery. "Recurrence" simply signifies the surgeon's failure to remove all of the diseased tissue. Undoubtedly it is the duty of every practitioner to advise prompt, complete removal of every tumor of the breast. The tumor

should not only be removed but immediately examined by a competent microscopist. As Cheyne has said, "the patient's chances lie in the first operation." It seems almost criminal for a surgeon to simply excise the diseased breast without clearing out the axilla. In suspicious cases the supraclavicular glands and fatty tissues should also be excised. The mere fact that the medical attendant does not find the axillary glands to be enlarged is absolutely no reason why he should not expose the axilla and carefully and thoroughly clear out same.

It is to be hoped that the future reports of cases of breast cancer will show the marked beneficial results of *early, competent* surgical intervention.

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### DOUBLE URETER.

A double ureter is the result of double growth from the Wolffian duct or a division of a single growth. Experience has shown that if the openings of the double ureter are normal, this anomaly has no special pathological significance. It is also true that in by far the greater proportion of the cases the condition has not been appreciated during life. Double ureter is by not means uncommon. Usually each ureter starts in its own separate renal pelvis; the two pelves being separated in the hilus by a broad bridge of renal tissue. An interesting point is the fact that if the ureters are distinct throughout the one which comes from the upper renal pelvis lies to the median side of the other and passes in front of or behind it in order to open into the bladder at a lower point. It is not uncommon to find the two ureters join and open into the bladder through a common tube. Wrang, and others have recorded such instances. It is unusual to find double ureter on both sides, although Bidwell, Tyson and others have observed this anomaly.

A few years ago Weigert observed seven cases of double ureter in a single year. Bostrom, Civiale, Boyer, Erlach, Neelsen, Kolisko, and others have presented interesting reports.

It is a fact that in many of the cases the condition was not detected or even suspected during life. Since the advent of the cystoscope, however, the anomaly has been more frequently detected.

Very recently Lewis has called attention to a very interesting case of gonococcic infection of a supernumerary ureter. The patient was a young man who had suffered repeated attacks of gonorrhea. The passing of each month found the patient with a reawakened attack of urethral discharge which was repeatedly proved to contain abundant gonococci. Cystoscopy showed three urethral openings into the blad-



der. Close observation revealed the fact that one of the two ureters on the left side was infected with gonococci. It was further found that both of the (double) ureters were potent.

Lewis says: "I am aware that it is not remarkable to find duplicate ureters in the course of post-mortem examinations, but I have been unable to learn of any previous instance in which three different urines have been drawn from the same living individual, nor of an instance in which one of three ureters has proved the source of recurrent gonorrhea."

Certainly the literature shows the not uncommon occurrence of double ureter: it is equally true that it is interesting to know that a reawakened attack of urethral discharge may be due to a gonococcic infection of a supernumerary ureter.

Another interesting anomaly of the ureter is an abnormal opening. Nitze concurs that this condition is far more important than a simple double ureter. In man the abnormal opening may be in (1) the sphincter viscae (2) the prostatic urethra, (3) the seminal vesicle, (4) ejaculatory duct, or (5) vas deferens. In the female the extra ureter terminates either in the bladder or in the urethra, vagina, vestibule, or in the persisting Gartner's duct.

Very recently Orthmann presented a very interesting case. The patient was a young woman 27 years of age; the clinical diagnosis was vaginal cyst. At the operation, however, it was found that the ureter ended in a blind pouch. Excision resulted in recovery.

Davenport reported a case of urinal incontinence due to opening of ureter into vagina. Davenport noticed a thickening of the anterior vaginal wall, forming a ridge about two inches in length. The urine was observed slowly dripping from the meatus, but not from the urethra. A papella seemed to give it exit. Davenport dissected up the urethra from the anterior vaginal wall and turned it into the bladder, with success.

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## THE THERAPEUTICS OF THE NATIONAL FORMULARY.

### II

#### GASTROENTERIC DISEASES.

The National Formulary contains an abundance of formulae to treat various abnormal conditions of the alimentary canal and its accessory organs. Neither do the mixtures lack elegance in the way of taste and appearance. The most fastidious patients ought to be satisfied. Quite a number of additions have been made, some of which are very valuable. We will consider the different diseased condi-



tions and the preparations indicated. But before discussing the diseases in general it may be valuable to call attention to a few preparations which are especially adapted for infants and young children.

#### COLIC.

We are by no means certain just what causes the accumulation of gas and the consequent painful contraction of the intestinal muscular coat, especially in breast-fed infants: the condition is not serious but causes considerable worry, and lack of sleep, to the parents. For ages carminatives have held a high place in the pediatric materia medica. The National Formulary provides an elegant carminative in the elixir anisi, a preparation that contains the stearopten of anise oil—oil of fennel and spirit of bitter almond. It also contains about 25 per cent. of alcohol. The average dose is 15 minims (1 cc.). This dose may be frequently repeated if necessary, and will usually give relief in the purely spasmodic form unaccompanied by any severe indigestion.

It should not be forgotten that valerian is a good antispasmodic and can be given with benefit in the spasmodic condition of the stomach and bowels. The elixir ammonii valerianatis N. F. in addition to the valerianate of ammonium contains chloroform, vanilla and ammonia water, drugs which are of value in colic. The dose is about 5 drops but even a larger dose may be safely given. This mixture is also very valuable in the restless conditions due to teething, rickets, or malnutrition.

Often the administration of enzymes after nursing seems to avert the paroxysms of colic, and for a shot-gun combination of enzymes the elixir digestivum compositum N. F. leaves nothing to be desired. Fifteen to 20 drops may be given after each nursing.

The bromides hold a very high place in the restless conditions of infants; let us recommend the elixir lithii bromidi N. F. in doses of 5 to 10 drops for restless babies. This preparation contains 5 grains of lithium bromid in each fluid dram. Another hypnotic which can be given to children is the elixir paraldehydi N. F., mixture which contains 35 per cent. of paraldehyde.

Elixir of pepsin and the glycerine of pepsin are also valuable digestants in the conditions mentioned. From the standpoint of the physiologist the elixir digestivum compositum is almost ridiculous, since the action of pancreatin in an acid mixture is inappreciable, and this ferment never reaches the intestine in an active form.

But we were about to overlook another valuable carminative which may be safely prescribed for the colic of infants. Mistura carminativa N. F. contains about 2 minims of landanum in each fluid

dram, and consequently is very effective, but should not be used in larger doses than 5 minims in young infants. If the opium were left out altogether the other ingredients would be very efficient. Hence it is best to prescribe Dalby's carminative without opium, then 10 to 15 drops may be safely given in hot water. Another old remedy, which had quite a reputation in colic and the diarrheas of infancy is the *mistura sassafras et opii*, Godfrey's cordial, which contains 2 minims of laudanum to each teaspoonful. As a stomachic in children *tinctura aromatica* might be used with benefit in 2 or 3 drop doses.

#### CONSTIPATION.

Judging from the enormous number of aperients, laxatives, purgatives, and cathartics found in the preparation of the U. S. Pharmacopeia and the National Formulary, one must conclude that the intestinal tract is still the principal site of onslaught in internal medication. We would scarcely take the time and space necessary to point out the advantage and indications for all of them. We do not know what practitioners are prescribing the *pilulae ad prandium*, or dinner pills. The National Formulary provides for several kinds. In the case of hearty eaters who eat more than is necessary for the body, an after-dinner pill may be a necessity. In these times, however, people do not take enough time to eat, and as rule require no laxative to carry off the excess of food. Constipation, on the other hand is very common, but physicians are relying on dietary and physical therapy more than on medicines to overcome this condition. There can be no doubt but that drugs are good adjuvants to the dietary measures, but medication must be used with proper judgment.

In all acute conditions, when a brisk cathartic is wanted the *pilulae colocynthis compositae*, N. F. may be prescribed. They contain extract of colocynth, aloes, resin of scammony and oil of cloves. Another pill has hyoseyamus in addition. Another pill contains the compound extract of colocynth and podophyllum. *Pilulae triplices* contain aloes, mercury and podophyllum. This by no means completes the list, but one naturally wonders why so many different pills are necessary. We are not sure who devised the *pilulae antidyspepticae*, N. F., for the pill smacks of the days of drastic purgatives, although it ostensibly is to be used for dyspepsia. It contains 3 grains of mass of cereury and the compound extract of colocynth with belladonna, ipecac and strychnine. We really regard this as a very unscientific conglomeration.

Several cathartics in the liquid form are also provided. The most valuable in acute conditions is the elixir *catharticum compositum*.

tum, which contains frangula, senna, and rhubarb. It may be prescribed in doses of 1 to 3 teaspoonfuls. The elixir frangulae may also be used for the same purpose. It would be tiresome to continue this enumeration.

Three different pills of aloes and compound pills of aloes are provided, which are to be used in chronic constipation especially. We often prescribe the elixir rhamni purshianae compositus for chronic constipation and have been pleased with the effect, unless the druggist failed to use active drugs in the mixture. This preparation contains cascara sagrada, senna and juglans. In fact cascara is an ingredient of many preparations, some of which will be noticed later.

#### ACHYLIA GASTRICA.

There are many conditions in which there is a deficiency of the gastric juice, e. g., the acute infectious diseases and their convalescence. In anemia and tuberculosis a deficiency is very common. There is also that functional disease of the stomach known under this name. In carcinoma ventriculi the gastric juice is very deficient as a rule. It is therefore helpful at times to administer some artificial gastric juice.

For convalescence of the acute diseases:

R

Elixir cinchonae, pepsini et strychninae, N. F. .... 3vi.

Sig. Teaspoonful in water after meals.

The indigestion of anemia:

R

Elixir cinchonae, ferri et pepsini, N. F. .... 3vi.

Sig. Two teaspoonfuls in water after meals.

In children there is often a condition of apepsia after convalescence from bronchitis or influenza. The following will be found useful:

R

Essentia pepsini, N. F. .... 5iv.

Elixir gentianae glycerinati. .... 3iss.

M. Sig. Teaspoonful in water after meals.

The indigestion of early phthisis often needs attention. The gastric juice is not always deficient, but tonics are indicated.

R

Elixir cinchonae, ferri, bismuthi et strychninae, N. F. .... 3 iv.

In the neurotic form of achlorhydria, much can be done to improve gastric digestion. The motility may be deficient and some bit-

ter tonic is indicated. The following will be found useful:

R

Fluidextracti condurango ..... $\frac{3}{4}$  ss.

Elixir gentianae, N. F. .... $\frac{3}{4}$  i.

Essentiae pepsini, N. F. q. s. ad. .... $\frac{3}{4}$  iii.

M. Sig. Teaspoonful before meals.

The use of hydrochloric acid is very necessary in many cases. This may be added to the above mixture or the following may be prescribed.

R

Liquor pepsini aromatici, N. F. .... $\frac{3}{4}$  6

Sig. Dessertspoonful in water after meals.

This is an elegant preparation to use in any form of apepsia. It contains one grain of pepsin in each fluid dram. It is rather deficient in hydrochloric acid, each fluid dram contains only a little more than one-half minim to each fluid dram. It is well, therefore to add about 10 or 15 minims of this acid to each dose of aromatic liquid pepsini.

The modern gastrologist has no use for the animal enzymes, yet they continue to be prescribed by the general practitioners, and the National Formulary has so many articles which contain pepsin. A very unscientific preparation is the elixir digestivum compositum, which contains pepsin pancreatin, diastase, lactic acid and hydrochloric acid. The pancreatin may just as well be left out, for it has been demonstrated that this enzyme can not pass the digestive power of the stomach and still remain in an active state. The diastase acts only in an alkaline medium and is probably inert. Fortunately these ferments are harmless and the compound elixir of pepsin must be considered as an acid pepsin elixir. It is a good vehicle for a variety of drugs which have a tendency to upset the stomach.

#### HYPERCHLORHYDRIA.

The most valuable therapeutic means in this secretory neurosis are dietary and hygienic. Non-irritating and non-stimulating proteids should be given in relatively large doses amounts. Milk, egg-albumin, boiled meats, or raw meats are indicated, and the patient should be kept on a strict proteid diet for some time. Olive oil given before meals has a soothing effect on the stomach and inhibits the flow of gastric juice. Freedom from care and out-door exercise is very necessary. To relieve the excessive secretion the following may be used with benefit:

Magma magnesiae, N. F. .... $\frac{3}{4}$  6

Sig. Dessertspoonful one half hour after meals.

The bismuth mixtures are deservedly popular in gastric affections characterized by hyperacidity. The National Formulary provides an abundance of preparations containing this chemical element. Better results, however, will be produced by prescribing the insoluble bismuth compounds of the pharmacopeia. The elixir pepsini et bismuthi is a very elegant preparation in the hyperacidity due to gastric fermentation and may be given in dessertspoonful doses after meals. Then we have the elixir of bismuth, liquor bismuth and a mixture containing bismuth and strychnine. The glycerite of bismuth is a very concentrated solution of this substance, as each fluid drachm contains about 16 grains of bismuth and sodium tartrate.

A very harmless and effective preparation and one that may be used in any form of gastric hyperacidity is the *mistura sodae et menthae*, which contains sodium bicarbonate, aromatic spirit of ammonia and spearmint water. This preparation may be used with advantage in the hyperacidity of pregnancy.

#### ACUTE GASTRITIS AND GASTRIC INDIGESTION.

Probably absolute starvation is the most effective procedure in all acute irritations of the stomach. The use of some drugs must, however, be resorted to in many cases. For the relief of pain nothing can be more potent than *mistura chloroformi et cannabis indicæ composita*, which contains chloroform, ether, cannabis indica, and morphin sulphate. The dose is about 30 minims. The name is rather formidable and the common name chloroform anodyne can be used in prescriptions. This preparation is also indicated in any severe abdominal pain when a hypodermatic injection of morphin is not advisable. A similar mixture, but one more likely to produce vomiting is the elixir chloroform compound, the dose of which is one-half fluidram. It contains chloroform, landanum, spirits of camphor and aromatic spirit of ammonia.

In milder cases the following prescription will assist in recovery:

R

Phenol .....	4 minims.
Liquor antiseptici alkalini, N. F.....	1 ounce.
Aquæ .....	2 ounces.
M. Sig. Teaspoonful in water every three hours.	
Or the following may be prescribed:	

R

Pulv. rhei et magnesiae anisati, N. F.....	16 grains.
Pulv. cretæ aromatici .....	90 grains.
M. Div. in pulv. xv.	
S. One powder every three hours.	



If the vomiting is severe and protracted some mild antiseptic can be given frequently in small doses. The following may be highly recommended:

J.

Elixir anisi .....2 fluidounces.

Sig. Teaspoonful in water every hour.

This preparation is especially useful in children and its ingredients are harmless.

It is often advantageous to give a brisk purgative in the acute gastric indigestions:

R

Pulv. hydrarg. chlor. mitis et jalapae.

Sig. Give one dose of ten grains.

J. Z.

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## EDITORIAL COMMENT

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#### CITRATE OF SODA IN INFANT FEEDING.

It seems that Wright's method of infant feeding by the addition of citrate of soda to diluted cows' milk is destined to play a very prominent part in the dietetics of infancy. At any rate, the increasing number of reports indicate that it is a valuable addition to our methods of modifying cows' milk to meet the digestive functions of the infant. In many ways it reminds us of the teachings of Jacobi, who never did grow very enthusiastic over the modern method of percentage feeding. Yet Wright's method should by no means displace percentage feeding; it should be used in connection with its principles. We have some misgivings that this method by throwing the entire digestion on the intestine may ultimately prove defective. We recall the satisfaction in which several forms of modification were received, and later experience proved some serious deficiency. Then the continued ingestion of so much sodium must throw an additional work on the kidneys and may occasionally produce ill effects. The main question, how do infants fed by Wright's method stand the infectious diseases can not be answered for many years.

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#### THE USE OF DRUGS.

Every now and then in the history of medicine some one starts a propaganda against the use of drugs for the treatment of disease; but in the end the use of chemicals is greater than ever, and the drug-doctors are in the majority. No doubt the physiological effects of hydrotherapy and physiotherapy are very potent, but their results are really more uncertain than drugs except in some well-recognized conditions. A hot water bag may give some relief in gall-stone colic, but in the end the physician with a hypodermatic syringe will reap the most gratitude from the suffering patient. The cold bath is very effective in the hyperpyrexia of influenza, but most patients will prefer a good dose of antipyrene or phenacetine. "I know of no diseased condition," said a prominent practitioner to us, "in which I can not do some good with the proper use of medicine." This physician is one of the most successful men with whom we are acquainted. His patients almost always get well. He is not averse to the use of physiotherapy and regards prayer a necessity to Christian life.

It is folly, therefore, to neglect the study of *materia medica* and experiment with costly electrical and vibratory instruments. These are certainly useful, but they do not cover the ground, while some new chemical or drug may give us remarkable results. Do not hesitate to uphold the drug-therapy at favorable moments, since the therapeutic nihilist takes pains to give some hard knocks whenever the opportunity arises. There is nothing in the practice of treatment by means of drugs which should give us any reason to be ashamed. But we should be ashamed of ignorance.

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### UNCTUOUS WORDS BUT UNCLEAN HANDS.

When will the physician learn to adhere closely to scientific truth at all times? When will he cease giving opinions from impressions only? When will he not be ashamed to admit his ignorance? Mr. Bok (*Jour. A. M. A.*, February 23) puts some caustic remarks in fine shape, and there is much truth in his words. The physician should know what he is using, and better still should know what he is saying concerning the drugs which he uses. Unfortunately, Mr. Bok makes no concession to that faculty of physicians, which is so well known to the promoter of fake enterprises, whereby they assume most people to be honest. A manufacturing concern which stands well with the community sends its representative who declares that a certain elegant mixture contains two grains of quinine to each fluid dram. The mixture suits the physician. It appears better than anything that he can prescribe in the way of palatability. The physician trusts this manufacturing company, for he has no way to analyze the contents of the mixture. He assumes an honest effort on the part of the manufacturer.

Hence, if the physicians hands are unclean it is ignorance. This ignorance can be explained in many ways, but the American Medical Association is making an earnest effort to educate those who do not know. Mr. Bok too deserves a few words of praise for investigating and telling use a few galling truths. A little shaking up will do us all good.

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### GRIP AND PNEUMONIA.

An interesting local epidemic of grip and pneumonia is reported by Woldert (*Medical Record*, January 5) for the details of which we must refer to the original paper. As no bacteriological examination was made it is impossible to decide whether this was really influenza, and we venture to suggest that the whole epidemic was probably a

pneumococcus infection. It can not be too strongly urged that the pneumococcus produces other lesions of the respiratory tract than an inflammation of the lungs. Cases of pneumonia are often only incidents in a wide-spread pneumococcus infection. The fact that the incubation period in the cases averaged seven days is strong evidence that the infection was not caused by the true influenza bacillus. The incubation in this disease is only two to four days. The danger of a young child who is suffering from a pneumococcus bronchitis to its grandfather is very obvious. Aged people should not wait upon or visit those sick with acute respiratory diseases.

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## CURRENT EDITORIAL TOPICS.

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### HEALTH INSURANCE.

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The *Medical Times* editorially discusses the subject of health insurance. The progress of insurance in all directions is one of the remarkable socialistic practices of modern times. The life tables based on one hundred thousand lives are marvelously accurate. In fire insurance no such accuracy is possible. The writer continues:

"Of late years health insurance has been the study and puzzle of the insurance authorities. It is a question that is bound up with many difficulties and technicalities. Thus, one information bureau reports to the International Association of Accident Underwriters that there were over one hundred and eighteen thousand cases of accidents reported to the companies for the year ending June 30, 1906, as against one hundred and three thousand the year before, a gain of nearly fourteen per cent. in one year. In the same period there were twenty-seven thousand of sickness claims presented to the companies, as against thirty thousand the year before, a percentage of gain of twenty-three per cent. This makes a grand total of one hundred and fifty-eight thousand claims reported in one year, with a net gain of over fifty per cent. The bureau was able to detect over five thousand questionable risks, while one thousand candidates were rejected, three thousand policies were cancelled and six hundred were marked "non-renewable."

Curiously enough, during this period over nineteen thousand persons were reported to have had previous claims against the same company, being divided as follows: Fourteen thousand reported two accidents, thirty-five hundred, three, one thousand reported four, two

hundred and seventy-seven claimed five, ninety-seven were unfortunate six times, thirty were similarly afflicted seven times, fourteen people reported eight accidents, four reported nine, two reported ten, and one unique unfortunate reported eleven catastrophes to his company.

This makes a file of 858,263 accident and health records, which forms quite a respectable number. Still, the health problem is troublesome, and many companies would reject that feature of their business if competition did not force them to it. The companies have found their losses to exceed all calculations for a variety of reasons. In the first place, when health insurance was seriously undertaken in America about ten years ago, the benefits were confined to loss of time from a very few ailments. Many of the usual and most to be dreaded diseases were designedly omitted, just as formerly insurance against accidents was confined largely to travel only. The time for benefits was limited, also. Gradually, however, the policies were broadened so as to cover disablement by any disease. Then the two contracts were merged and finally many companies refuse to issue a health policy unless the applicant also takes an accident policy."

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## THE TREATMENT OF GENERAL PARESIS BY MERCURY.

Several writers have declared that the so-called metasyphilitic diseases, as general paresis, may be produced by the excessive doses of mercury given for the cure of the original disease. While this theory probably lacks adequate proof, it is at least suggestive of a possible harm which may be done by overmedication. The *New York Medical Journal* (November 17) also sounds a warning to practitioners. To quote:

"Inasmuch as the belief has become widespread that syphilis is one of the most important causes of general paresis, it has got to be more and more popular to make an attempt to delay the progress of the disease by mercurials. The ill success attendant upon the modes instituted in the earlier days of such treatment has been ascribed to insufficient doses, and the period of massive doses was a logical sequel, so that at the present time we find the use of enormous doses of mercury subcutaneously very often carried out, particularly in private practice.

Successful results have been reported, but they have been very few, and there have been not a few neurologists of note who have come to the conclusion that intense mercurialization is not only of little value, but probably productive of much harm. Their warning voices were made distinctly audible at the recent International Medical Con-



gress. held in Lisbon, where Raymond, Sicard, and Dupre were in accord in condemning the practice. Raymond has come to believe after an extensive trial that this method of treatment is dangerous, inasmuch as he has frequently observed a marked aggravation of all the symptoms following the beginning of the injections, in some instances leading to the extremely speedy death of the patient. He looks upon the good results which have been observed from time to time as having been achieved, not in general paresis, but in syphilitic meningoencephalitis, which is often confounded with the former disease."

Such authorities as Sicard and Dupre are cited as being against the employment of mercury in this disease. The writer concludes:

The discussion is not closed by any means, especially in view of the important fact that under the best of circumstances and with the aids of the most refined psychiatric technique the diagnosis of conditions resembling paresis is fraught with inscrutable difficulty. Even the best of psychiatrists recognize their inability to be certain in some ten per cent. of the cases at least, and it becomes of vital importance to determine if, in our anxiety not to let the small, indistinguishable tenth go untreated, we must subject the nine-tenths to a process which may do the patients harm. Until we are in a better position, however, to make our diagnosis more certain, and until it can be shown beyond peradventure that massive doses of mercurials can produce disastrous results, psychiatrists will probably continue to deem it advisable to try to save the few, especially when the many are already doomed.

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### REPAIR OF PERINEAL LACERATION.

The *ANNALS OF GYNECOLOGY AND PEDIATRY* gives some excellent advice to beginners. It is unquestionably true that laceration of the perineum may be prevented in a certain percentage of cases by proper management of the second stage of labor. Yet some cases of laceration are inevitable and the only treatment is prompt surgical repair. The repair can be done in bed but the writer gives the following as the best:

"There are several points that are important to observe in the preparation of the patient. First, a table of proper height should be obtained, the patient transferred from the bed to the table, and as stated above, placed in the lithotomy position, prepared as for any operation, and after thoroughly douching out the vagina with hot sterile salt solution, the upper vagina should be tamponed with sterile

ganze to prevent the flooding of the operative field with blood. At this stage the operator needs assistants, both that of an anesthetist, a helper and a nurse. The choice of anesthetic is optional and lies between chloroform and ether, with the preference on the side of chloroform if there has been no tendency to post-partum hemorrhage. The next point is the choice of suture material. If stitches are to be buried, plain No. 2 catgut should be used. The stitches that are to be left on the vaginal side, the best suture material is probably chromicized catgut, No. 2; the best material for the external stitches are heavy silkworm gut, specially heavy so that it will not cut through the soft and bruised structure of the perineum. If there is muscular tear stitches of plain catgut should unite the torn edges of the muscle. If the sphincter ani is torn and pulled out of its canal, a stitch should be passed through the free end, and the needle carried along the sheath of the muscle to the point of its severance from its attachment, namely: on the side of the anal orifice and about three-fourths of an inch from it. This muscle bed can be easily felt by the introduction of the little finger and care should be taken that the stitch passes through the entire length of this canal and emerges from the skin at the end of it. A needle should then be threaded on the opposite end of the catgut suture and the same procedure carried out with this end, bringing the suture out on the surface of the skin about one-eighth of an inch from the one already put in place. A little manipulation will guide this muscle back into its sheath and tying the stitch will hold the end of the muscle in its proper position. In passing the stitch through the end of the torn muscle care should be taken that it goes through the muscle tissue about one-quarter of an inch from the end on the lower side of the muscle, emerging on the upper side, re-entering the muscle and passing out again on the lower side: that is, so as to get the best possible traction on the muscle without any strangulation of the fibers.

Before closing the tear careful digital examination should be made in order to ascertain the extent and depth of the tear. In closing this, the upper angle should be sutured and the stitch should go deep enough, and far enough away from the edges of the tear to completely bring together and not pucker the divided tissue. This is best done with the finger introduced into the rectum, stitches being tied by an assistant. It will be often a matter of surprise if the stitches are placed without the finger in the rectum to find that after tying the ends that the finger introduced into the wound will enter into a pocket that extends to the highest portion of the injury; in other words, the stitch simply uniting the vaginal mucous membrane and some submu-

cons tissue but not actually closing the wound by complete apposition of the divided surfaces. This is unquestionably the cause of many bad results of immediate perineorrhaphy.

After attacking the condition as above laid out, in other words, treating the injury as a surgical condition, in a surgical manner, the results will be found to be so much better that it will be done as a routine rather than exception.

The after treatment of this condition is as an ordinary confinement with the exception that special care should be taken to change the vulva dressing often enough so that the stitches are not macerated, and in the cleansing a solution of one to eight thousand bichloride should be used, as this tends to harden the catgut and not to soften it as does almost any other solution. The silkworm gut stitches are removed either on the eighth or tenth day, the indication for removal being the amount of cutting by the stitch, as when the stitch has begun to cut its usefulness is practically ended. The bowels should be moved on the third or fourth day, preferably by castor oil, seconded by an enema of salt solution with two ounces of glycerine."

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### FADS IN DIETETICS.

What physician still clings to the old theories regarding the causation of dyspepsia? There is much nonsense in many of the dietary measures often prescribed. Most children swallow their food in large pieces and still survive. The following from *American Medicine* is to the point. Although the editor of that periodical elsewhere has made eyestrain one of the most common causes of chronic indigestion, we will forget this at present.

"The repetition of humdrum nonsense when one has nothing new to say is the last resource of the weary writer and the fashionable. For how many years is it now, for how many generations indeed, that the ills of mankind have been ascribed to errors of diet, improper food, "the mistake" as Dr. Osler says, "of chewing and digesting improperly?" The result—for the ignorant laity and their quack leaders, while hating us, finally take us at our word—the result is the multiplication of a hundred or a thousand crank sects, vegetarians, raw-meat eaters, raw-everything eaters, chewers by machine methods, and heaven only knows of the rest, who base their hopes of the millenium upon the pernicious principle of tinkering with the choice of food, methods of mastication, etc. For a hundred years the food supply of the people of the civilized world has been improved in every way—as to constancy, quality, perfection of preparation, cooking, and meth-

ods of eating, until the frightful disease, dirtiness, and innutritiousness of the food of the past is now, even with the poorest, a thing almost unknown, and despite this the dietetic hndrumpers persist in ascribing the increase of the diseases of digestion and assimilation to bad choice of food, overeating, bad cooking, improper mastication, and improper digestion. There is a big illogicality in the reasoning. Is it not time to look for other causes than the old dietetic ones which, indeed, have almost disappeared, and *pari passu* with the increase of the diseases of the digestive organs?"

### THE METRIC SYSTEM.

However convenient it seems the metric system is being very slowly adopted by the people, and even in the scientific world its exclusive use does not seem probable. Some time ago some one argued correctly that our whole industrial system is based on the foot measure and it is unlikely that the metric system will make any inroads upon it. *American Medicine* (December) gives some instructive reasons for the slow adoption of this system.

"The real reason why the metric system fails is seldom mentioned—it is unnatural to do mental arithmetic except by dividing into halves or thirds. This fact was first mentioned by Herbert Spencer and was the basis of his bitter opposition to the decimal system. Practical measures survive because they can be repeatedly divided by two or three to get other units. The relations to each other have grown up naturally and cannot be replaced. It is infinitely easier to comprehend fractions like  $\frac{1}{2}$ ,  $\frac{1}{4}$ ,  $\frac{1}{8}$ , etc., and these are instinctively used by practising physicians, instead of an odd number of milligrams which patients cannot comprehend. For these reasons the metric system has not "made good" in practical medicine if we may use a new and expressive term. There is indeed a developing opposition to it, which does not bode well for its ultimate survival as a universal system, although scientists cannot do without it. Its use was made compulsory among army surgeons, and we understand that they are not at all unanimous in its favor—indeed there is some strong opposition by reason of alleged dangers and impractical cumbronsness. A few wish an early return to measures which have proved their practicality by survival. We have called attention to the matter with the definite policy of checking inconsiderate changes, and to voice the opinions of practising physicians who rarely if ever express themselves in print and who never have use for metric measures. The small part of the nation who find its use indispensable are not considerate of the needs of the vast majority of mankind. Tyrannical compulsion will only land us in the condition of Switzerland."

## THE ZOOLOGICAL DISTRIBUTION OF INFECTIOUS DISEASES.

In an interesting editorial (Oct. 20,) the *N. Y. Medical Journal* again recalls the singular fact that an infection, serious and virulently contagious for one or more animals, fails to attack others. "In other words, immunity and susceptibility depend to a large degree upon the place of an animal in the zoological scale."

This condition holds true even with the large parasites, plants and animals. Intestinal parasites select one or more animals as their hosts. In the parasites high in the zoological scale something akin to intellect probably guides them in the selection of their hosts. In the case of bacteria the anatomy and chemistry of the animal determine whether the microorganisms will thrive upon it or not. It is these differences that make immunity, although it is as yet uncertain to what degree insusceptibility is a passive process, involving merely the lack of suitable environment, or to what degree it depends on active resistance. To quote:

*A priori*, it would seem to be a comparatively simple matter to determine the laws, if not the ultimate reasons, governing the distribution of parasites throughout the animal and vegetable kingdoms or, to limit the problem somewhat, the distribution of infections among animals. A logical procedure would be, first of all, to compile a check list of the animals susceptible or immune, respectively, to the various infectious germs. We should expect that mere inspection of such a list would at least favor the induction of general laws governing the distribution of infections. Then, by studying the comparative physiology of the various animals, we should expect to be able to deduce at least partially satisfactory reasons for such distribution. As a matter of fact, the student essaying such a problem encounters insuperable difficulties. First, the bare facts at our command are very meagre; surprisingly few definite statements are on record to show what infections involve or regularly fail to involve certain animals, and there are even direct contradictions by different observers: little is known of comparative physiology in regard to such chemical details as must have a bearing upon the efficient lodgment of parasites. Secondly, such facts as are available do not suggest any obvious law, but, on the contrary, rather the absence of any general law, and yet the inherent probability that such a law exists and that it will prove of practical sanitary and economic value should act only as an incentive to the securing of further empirical knowledge.

Yet there is no disease germ which is absolutely confined to one species or host. Even syphilis has been inoculated into monkeys.



## MEDICAL DIGEST

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### RECENT CONCLUSIONS FROM EXPERIMENTS IN THE BENDER LABORATORY.

(CYTOTOXIC SERA. (*Pearce and Jackson.*))

In so far as conclusions from so small a number of experiments are justifiable, our results do not support the theory that specific cytotoxic sera may be developed by the injection of nucleoproteids but indicate, rather, that such sera have certain mildly toxic properties acting in a general way and affecting especially the principal excretory organ, the kidney. In this regard we are in accord with Marrasini and in a general way with Bierry and his associates, but in direct conflict with Beebe's very definite statements.

It is clearly evident, however, that Beebe's claims for a specific pancreas serum based on the demonstration of reducing substances in the urine, especially in the absence of histological changes in the pancreas, is untenable in view of our experience with like reducing substances more or less constantly present in the urine of normal dogs.

We can make no definite statement concerning nucleoprotein hepatotoxic serum, as we did not prepare such, but it is difficult to explain the focal necrotic lesions of the liver, caused by Beebe's hepatotoxin, as a result of the action of a substance which should, presumably, affect the liver cells more diffusely. It may or may not be a matter of importance that his nucleoproteids were prepared from organs but roughly washed in running water and, therefore, especially as regards the liver, containing large amounts of blood. That a very toxic nucleoprotein may be obtained from red blood cells is well known and it is possible that, as a result, Beebe's serum may have contained hemolysin and agglutinin due to this substance, in addition to the supposed hepatotoxin, in sufficient amount to cause focal liver necroses through agglutinative thrombi, as has previously been described by one of us.

Beebe states that all his sera "are markedly hemagglutinative and hemolytic *in vitro* in dilution up to one to five, but in dilution of one to twenty or above no difference is to be detected between the immune and the normal serum." The hemolytic and hemagglutinative powers of our nucleoprotein sera (the nucleic acid sera were not tested) were much weaker. Thus the dog's pancreas nucleoprotein serum,

for example, had very slight power to hemolyze or agglutinate red cells. Two parts of the pure serum to one of dog's blood caused neither hemolysis nor agglutination, while 10 parts were required to cause but a faint hemolysis; with the same amount a very definite fine agglutination was evident only after five minutes. It would appear, therefore, by comparison, that the use of blood-free organs in the preparation of nucleoproteid sera lead to the production of a serum less hemotoxic than those developed by the use of unwashed organs. Under such circumstances, therefore, it is very important that future investigators of nucleoproteid sera work with blood-free tissues.

The changes in the kidney resulting from the administration of the kidney nucleoproteid serum, while very definite, cannot be considered as specific or even "special," for similar changes, often of the same grade, characterized the action of all other sera, even that prepared from cow's pancreas. These changes are, therefore, to be regarded as the effect of the excretion of toxic substances rather than as the manifestation of a selective action of the serum. It must be admitted, however, that it is difficult so to explain the severe albuminuria described by Beebe.

Finally, attention must once more be called to the importance, in all investigations of cytotoxic sera, of the use of blood-free organs, to the occasional occurrence of copper-reducing compounds in the urine of apparently normal dogs, to the not infrequent spontaneous nephritis in these animals, and to the possibility of albuminuria due to a catheter cystitis.

#### ATHEROMA AND CALCIFICATION (*Baldauf*).

The absence of calcium soaps in the extracts of all aortas examined leads us to the conclusion that in pathological calcification, of the aorta at least, the formation of calcium soap is not an intermediate process.

The analyses of the residues apparently point to the fact, insisted upon by Wells, that in pathological calcification, the inorganic salts are deposited in approximately the same proportion as in normal ossification. This does not necessarily signify, however, that the initial processes, from which pathological calcification and normal ossification result, are identical.

The remarkably high percentage of lecithin in the initial stage of calcification and the fact that with increasing calcium content there occurs a coincident diminution in the percentage of lecithin has led us to suspect that the phosphate radical may be supplied from a decomposition of lecithin.

URIC ACID. (*Jackson and Blackfan.*)

The elimination of uric acid on a purin-free or nitrogen-free diet is not a constant value for the same individual.

There appears to be evidence that the elimination of creatinin may be altered by conditions other than that of the creatinin in the food.

Alcohol increases the output of uric acid during a nitrogen-free diet; there occurs a coincident diminution in the elimination of ammonia; the organic phosphorus pentoxid excretion is also increased.

Both colchicum and sodium salicylate increase the output of uric acid, along with which takes place an augmented excretion of organic phosphorus pentoxid.

These facts seem to indicate that the rise in the uric acid elimination is caused by an increased formation as a result of augmented decomposition of nuclein-containing compounds of the cell.

From this it seems reasonable to decide that any agent which tends to cause an increased production of uric acid in the organism and thereby to increase its amount in the blood, must be contraindicated in those conditions where there exists a tendency for a deposition of urates to occur (gout). Probably the temporary beneficial effects of salicylates and colchicum observed clinically are the results of some secondary action possessed by them. That no permanent benefit must be due to the fact that they are contraindicated.

AFFECTIONS OF THE THYROID GLAND. (*Beilby.*)

In the study of this series of cases especial emphasis is directed to the following points:

Simple colloid hypertrophy is the most common affection of the thyroid gland. In a large percentage of cases this hypertrophy is temporary, representing, apparently, a physiological process, taking place in early adult life, and later there is a return of the gland to its normal condition. This early hypertrophy may be permanent, and in addition there may be a return of the secretory activity of the cells together with the formation of new thyroid tissue. This latter process often simulates clinically a malignant transformation.

Adenoma of the thyroid is by no means a rare affection. Its differentiation from simple colloid hypertrophy is readily made, both from a clinical point of view and from a microscopic examination of the specimen. While the histologic structure of the two lesions are similar, careful examination reveals determining points of difference. The various types of adenomata, differ only from a histologic standpoint; this difference being due entirely to the secretory activity of the cells of the individual vesicles. The adenomata may occur singly or as multiple tumors of one or both lobes. Recurrence after removal

is occasionally observed in tumors which from a histologic point of view, at least, are adenomata.

Hæmorrhage as a true etiologic factor in the production of cysts of the thyroid gland, is uncommon. By far the greatest number of cysts of the thyroid are produced by a degeneration of adenomata. The walls of these cysts we find composed of a histologic structure which exactly corresponds to one or the other of the types of adenoma. Secondary changes in the cyst walls are common, and are the result of compression and degeneration.

Thyroid tumors may occur, which histologically present none of the indications of malignancy, but which clinically must be considered as such. These tumors occur outside of the thyroid gland, are probably metastatic, and usually appear in bony structures, the gland itself presenting at least no clinical evidence of primary involvement.

In exophthalmic goitre in addition to the type of the disease which presents a definite and constant clinical and pathological picture, there are other, so-called, irregular forms, which are associated with or occur secondarily to other thyroid affections, in which the symptom complex of Graves's disease is not complete, and the epithelial hyperplasia occurs only in foci and is of lesser degree.

Tuberculosis of the thyroid, while a rare affection, is a possibility which must always be considered in diagnosis. The disease may occur in one lobe without involvement of the others, and produce a tumor which clinically simulates an adenoma, and the condition though of long standing may present no visible indications of an inflammatory condition.

Carcinoma of the thyroid is more common than indicated by this series. Outside of the "goitrous districts" carcinoma occurs most often in glands that are apparently normal, and here the type of growth is that of an adeno-carcinoma.

The diagnosis of the benign thyroid affections should as a rule present little difficulty. In contradistinction to the benign lesions carcinoma does not produce a large tumor and obstructive symptoms and infiltration of the surrounding tissues occur early.

The treatment of thyroid lesions with the possible exception of exophthalmic hypertrophy rests entirely upon a surgical basis. Accumulating experience likewise tends to emphasize the superiority of partial thyroidectomy over the many other methods employed in the treatment of exophthalmic hypertrophy.

The risks of general anæsthesia are too great to commend its employment as a routine practice in operations upon the thyroid gland. All cases can be successfully dealt with under local anæsthesia, and the primary death rate reduced thereby greatly.—*Albany Medical Annals*, January, 1907.

## ABDOMINAL PAIN IN DISEASES OF THE PELVIC ORGANS.

Donald and Lickley (*Practitioner*, October, 1906) mention one condition of an acute nature, in which a characteristic pain has to be noted and that is, when the pedicle of an ovarian cyst is suddenly twisted, and acute congestion of the tumor is produced. There is always abdominal pain, but the tenderness, on examination, is still more marked, and the most characteristic symptom of all is that the pain is greatly increased when the patient turns in bed from one side to the other.

Donald thinks that in chronic gynecological ailments we find the most common pain is one situated in one or other iliac region, although the older text-books commonly lay emphasis on backache. Iliac pain is frequently due to uterine affections and not ovarian as frequently as maintained.

If a kidney is sufficiently loose to cause pain it is generally quite easy to detect the organ by careful palpation, and the painful region will be found to be at a higher level and more to the back than in other right sided troubles. In appendicitis, the pain is more severe and more persistent, and the attacks are generally well marked. If the ovary is sufficiently diseased to cause abdominal pain, there ought to be no difficulty in palpating it, and in deciding that it is abnormal in some way, i. e., enlarged, prolapsed, or adherent.

When the iliac pain is caused by uterine trouble, the uterus will always be found on careful bimanual examination to be enlarged, and either retroflexed or retroverted or acutely anteverted or in a position of exaggerated anteversion. When the patient complains of a dragging low down in both iliac regions, or in the hypogastric region, I am accustomed to look on this as an almost certain sign of uterine trouble.

Lickley shows that there are several more or less definite points, painfulness of which indicates certain organs being affected as follows:

The *ovarian* lies slightly below the level of the umbilicus and about two inches to one side of the midline—practically over the point where the 11th dorsal nerve pierces the sheath of the rectus abdomen.

The *tubal* is to be found lower down on the outer margin of the sheath of the rectus at a point where the twelfth nerve pierces.

The *uterine* corresponds to the site of the internal abdominal ring.

A second uterine point may be elicited over the external abdominal ring and a third may occasionally be obtained by pressure on the



anterior crural nerve immediately below Poupart's ligament.

#### ACUTE ABDOMINAL PAIN.

Howell briefly considers the causes of pain felt in the abdomen.

(I) Those where the pain is merely referred to the abdomen, the morbid condition giving rise to it existing in some other part of the body.

(II) Those where the pain is due to intraabdominal disease.

Mistakes are not infrequently made because of forgetting the first class—referred pains.

Diseases of the pulmonary and nervous systems are the most likely to give rise to such mistakes. The pains of early pneumonia and pleurisy when on the right side simulate acute appendicitis.

Howell recently saw three patients upon whom appendisectomy had been performed needlessly. Early and atypical tabes, caries of the dorsal vertebrae (especially in children) give rise to abdominal pain, so also tumor of the spinal cord.

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#### PARAVERTEBRAL TRIANGLE OF DULNESS IN PLEURAL EFFUSION.

Thayer and Fabyan (*Am. J. Med. Sci.*, January, 1907) call attention to this valuable sign described by Grocco in 1902.

It is a triangular dulness on the side opposite the effusion. The apex is about the height of the fluid at the vertebral column the base extends two to seven c.m. from the spine. The vertical side of the triangle is represented by the line of the apophyses of the vertebrae. The hypotenuse connects the two and sometimes shows a slight convexity.

When the patient lies on the affected side the triangle of dulness diminishes or disappears, and reappears again when the erect posture is assumed, or when the patient lies on the other side.

The triangle is usually larger on the left side—that is in the case of right sided effusion—than on the right.

This conclusion, too, is reached, that although there may be a small strip of dulness along the spine on the side opposite a pneumonia, they have but once detected anything approaching a paravertebral triangle—this showed little or no change of position.

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#### ATAXIC RECTUM.

Collier F. Martin (*N. Y. Med. J.*, September, 1906) concludes an article on this subject with these words:

“As the rectal and vesical symptoms come on early in the course

of tabes, a paralyzed external sphincter, with a history of persistent constipation, should suggest to the mind of the examiner the necessity of trying the other reflexes. The addition of bladder disturbances may be considered very suggestive of some changes taking place in the spinal cord, interfering with the transmission of voluntary impulses from the brain. The disturbance of the other reflexes, such as the loss of knee jerk, poor station, and impaired papillary reflexes, will frequently clear up the diagnosis."

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### RHEUMATIC CRICOARYTENOID ANKYLOSIS.

Mosely (*N. Y. Med. J.*, September, 1906) gives some of the symptoms. The patient may or may not complain of dyspnea or dysphagia. He may be conscious of nothing abnormal except a tendency of the voice to tire easily, or he may be subject to rather frequent attacks of laryngitis with its consequent aphonia, complete or partial. External palpation of the larynx may be of value if it elicits pain over the cricoarytenoid articulation, but this sign is indefinite. It is the laryngeal mirror which makes the picture interesting. In most cases the chords are in the cadaveric position or in adduction. The cord retains its normal tenseness, for there is no paralysis of the thyreoarytenoid muscle.

Dr. Mosely recites a case of his own, in which he made the diagnosis of cricoarytenoid ankylosis for the following reasons:

"1. Absolute immobility of the joint. In phonation pressure on the normal arytenoid against the affected one does not displace the latter. This it might do if the lesion was a nerve paralysis.

2. The swollen appearance of the joint has remained practically unchanged for months.

3. The normal tense appearance of the cord showing an absence of any local evidence of paralysis.

4. Absence of any evidence of pressure on the recurrent laryngeal nerve.

That the rheumatic element is the causal factor is indicated by:

1. A rather marked family history. 2. A personal history of indefinite rheumatic character, with a recent rather sharp attack simulating gout, associated with an acute attack of laryngitis. 3. The complete absence of any other known cause for the condition. It is for these reasons that I think the diagnosis of rheumatic cricoarytenoid ankylosis is justified."

## PERCUSSION—TENDERNESS IN PULMONARY TUBERCULOSIS.

Iglaner (*Lancet-Clinic*, December 15, 1906) lays stress upon the tenderness elicited by percussion over the diseased portion of the lung. His method is described in the following words:

"The involved portions of the lungs were first outlined in the usual way by inspection, palpation, percussion and auscultation, and a chart made of the findings. Then with ordinary stroke I would again percuss the chest and inquire of the patient if he felt any pain. The patient would frequently reply that it hurt him over the area previously outlined, unbeknown to him. A common response was that I seemed to strike harder over the diseased lung, when, as a matter of fact, I took every precaution against so doing. One very intelligent patient described the sensation as that of striking a bruise. Sometimes the patient would wince under the stroke. If ordinary percussion did not suffice, then firm, deep percussion was employed, first with the fingers and then with the pleximeter and hammer. It is usually not necessary to employ any but finger percussion.

Certain precautions are necessary in making this test. First, it is best elicited in the supraclavicular fossa and intercostal spaces. Owing to the muscular thickness it requires firmer percussion over the posterior than the anterior chest. The patient should not know when to expect tenderness."

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THYROID EXTRACT.

It has been proven by recent experiments of Prof. Lenz, that persons who have inherited a good working thyroid gland will have greater immunity to infectious diseases.

The infectious diseases are accompanied by symptoms which indicate an increased function of the thyroid gland, that is, symptoms of hyperthyroidia, such as hyperthermia, tachycardia, slight exophthalmos, perspiration, diarrhoea and diuresis.

On removing the thyroid gland from animals it has been found that the descendants of the animals are smaller and less hardy. Similar results are seen in children of parents with diseases of the thyroid gland, e. g. goiter. The children of cretenoid parents, as a rule do not develop, either mentally or physically, but if thyroid extract be given, then we see wonderful improvement in mental and physical growth.

In giving thyroid extract, caution should be observed to avoid the condition of iodism. The medication should be discontinued im-

mediately on the appearance of nervous excitability, vasodilatation and of renal or gastro-intestinal disturbance. Thyroid extract also has an injurious effect on the normal activity of certain anatomical elements, notably the nerve cells, which are still more affected by the loss of phosphorus and nitrogen. Accidents, sometimes of a grave character have occurred, especially in the treatment of obesity by thyroid extracts and these toxic effects may last for a long time. For this reason the Academy of Medicine of Paris has suggested that thyroid extracts be placed with poisonous drugs and not to be sold except on prescription of physician.

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### RING WORMS.

A four per cent. solution of Formalin in Glycerin is highly recommended as a remedy for ring worm. The surface should be cleansed with turpentine followed by soap and water and then apply the formalin—glycerine and repeat several times for about an hour. One prolonged treatment of this kind is usually sufficient.

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### SYPHILIS OF THE LUNG.

Pulmonary syphilis may be congenital or acquired. Virchow, in 1858, was the first to call attention to a pulmonary condition designated "white hepatization," and which he noted especially in the lungs of syphilitic newly born infants. Virchow also noted a brown induration and a collection of brown pigment in the lungs of a number of adults accompanying a similar congenital "white hepatization." He considered the pigment due to an impediment to the blood stream in its passage through the pulmonary tissue, consequent upon the filling of the alveoli by round cells. It is true, Virchow didn't commit himself to the statement that these hepatized areas were undoubtedly syphilitic processes. Time has, however, proven that pneumonia alba is in reality syphilis of the lung.

At the present time pulmonary syphilis is regarded as being of very infrequent occurrence. A few writers go so far as to maintain that acquired pulmonary syphilis does not exist. That it does occur is, undoubtedly, a fact. Very recently Kokawa has reported four cases of congenital pulmonary syphilis; in all the patients, death occurred before, during, or shortly after delivery.

Acquired pulmonary syphilis may appear within a few months after the appearance of the initial sore; it may appear as late as twenty years after the initial sore. Frank, and Schirrin, have each reported a case in which the pulmonary lesion appeared only a few months after infection.

Claytor has referred to the finding that the lesions of pulmonary syphilis may be (1) a gumma, (2) a pneumonia, and (3) a fibrosis. In gumma the lesion may be single or multiple, round, elliptical, or irregular in shape. It may vary in size from a hemp seed to a goose egg. Gumma is usually situated at the root of the lung, but may be at the apex or elsewhere. It may appear as a gelatinous mass or a nodule of a grayish-white, or reddish, or yellow color, usually surrounded by a more or less distinct capsule, formed through inflammatory changes, set up in the surrounding lung tissue. Thayer and others mention that circumscribed gummata do not differ materially from the diffuse form save in the spherical form of the focus and the greater tendency to caseous degeneration. It is agreed that gummata occur more frequently in the right than in the left lobe.

In the pneumonic form there is an infiltration of the lung resulting from the syphilitic infection, which above, or in connection with nodules, may extend over a pulmonary lobe.

Pankritius holds that the primary proliferation of the connective tissue in lung syphilis is characteristic of lues. This proliferation of the connective tissue elements may be either a thickening extending from the hiruís around the bronchi and vessels, or of isolated masses of fibroid tissue in various parts of the lung; or of diffuse changes occupying the whole or the greater part of one lung.

*Symptoms.*—There is nothing characteristic in the symptoms. Cough is usually the first symptom to attract attention. In many of the cases an associated ulceration of the larynx, trachea, or bronchi is present, and responsible for a more or less constant cough. The sputum is at first quite similar to that accompanying ordinary bronchitis, but later it frequently becomes tinged with blood; it may become fetid from the bronchietatic cavities formed by the syphilitic pulmonary changes. In some of the cases the cough is followed by hemoptysis. Elastic tissue may be present in the expectation. Dyspnoea is a very infrequent symptom. Pain is not an important or a diagnostic symptom. The attending physician usually makes a diagnosis of phthisis.

Concerning the diagnosis Thayer has said:

The chief diagnostic points are that the gumma does not tend to liquefy under the attack of pyogenic organisms and that in it no tubercle bacilli can be found; while tubercular foci will, almost without exception, reward careful search with the presence of the bacillus, or it may be regained by inoculation of animals.

In discussing the diagnosis Elsworth Smith, Jr., has recently said:

The clinical diagnosis of the affection very largely depends



on (1) the establishment of the undoubted presence of a syphilitic infection, and especially of lesions in other parts of the body; (2) the evidence of an infiltration or consolidation of lung tissue, especially situated in the sites of predilection; (3) the absence of the tuberculin reaction, or, on repeated examination, of tubercle bacilli in the sputum; (4) the effect of antisyphilitic treatment.

Smith, Jr., has observed four (4) cases of pulmonary syphilis. Very recently Claytor, Hughes and Wilson, Kokawa, Fischel, and others have reported very interesting cases. In some of the cases the diagnosis was made before death and antisyphilitic treatment afforded quick relief. In Smith's cases treatment has given good results; in gained in flesh and strength, so that at the time of leaving the hospital his general condition was very good.

A careful observation and study may show that syphilis of the lungs occurs far more frequently than has hitherto been deemed probable. When a patient presents many of the symptoms and signs of pulmonary phthisis, and yet the medical attendant fails upon repeated examination to find the tubercle bacilli, and especially if there is a specific history present, the practitioner should, I think, try the antisyphilitic treatment.

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## NEUROLOGICAL DIGEST

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### CHOLIN IN EPILEPSY.

It was Liebreich who first found cholin among the products of decomposition of phosphorous compounds from the brain. This substance is toxic and its importance in nervous diseases has been suspected by many investigators. Epilepsy especially has been attributed to an intoxication by cholin. Very suggestive are the experiments of Donath.—(*Journ. of Nervous and Mental Diseases*).

Donath has made careful chemical and microscopical studies of the cerebrospinal fluid obtained by lumbar puncture from epileptics. He finds that it contains cholin, and that this cholin is capable of producing violent convulsions in animals. The method was as follows: The fluid obtained under sterile conditions was neutralized with HCl, dried over the water-bath to a brownish mass, and extracted with absolute alcohol which dissolved the cholin chloride, but not the alkaline salts of HCl. The cholin chloride was then precipitated with platinum chloride, as a cholin-chloro-platinate. This was re-

cognized by its solubility in cold water, and the characteristic microscopical crystalline forms. Donath has subjected 64 cases of various forms of nervous disease, which included 22 of epilepsy, to this investigation. Of these 22 cases 19 showed cholin. Of the other cases the organic forms of nervous disease showed it in a large proportion of cases, indicating a degeneration of the nervous tissue, increased liberation of lecithin, and the separation from it of the cholin. It appears, although it is not certain, that the amount of cholin is proportional to the severity of the disease process. Among the other constituents the most important, from the standpoint of quantity, is sodium chloride, also ammonium chloride, phosphoric acid, rarely, lecithin, and frequently a substance which reduces copper. Donath does not decide whether this is sugar or pyro-catechin. Cholin was not found in the blood or urine of these cases. Injected into the cortex of the brain, or beneath the dura in animals, cholin produces severe tonic and clonic spasms, often leading to paralysis. Control experiments performed with sodium chloride solutions were negative. The paper is concluded with a review of the literature upon the physiological action of cholin.

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### PROTOPATHIC AND EPICRITIC SENSIBILITY.

The general practitioner receives enough criticism from the specialist, it is time for the former to protest against some of the absurdities of the latter. Especially have we in mind the cumbersome and sometimes obscure terminology adopted by the neurologist. Any new view point receives an additional name; fortunately most of them are soon forgotten. Here, however, we desire to call attention to the work of Head, Rivers and Sherren (Brain, 1905) who after an exhaustive study of the apparent nervous system conclude that the sensory nerves are composed of three different systems. Two of these are called protopathic and the third epicritic. The first consists of two kinds, one that supplies the skin and the other the deep structures. The first is called the somatic part of the protopathic system, while the latter is the visceral part.

Dana (*The Journal of Nervous and Mental Disease*, September) sums up the function of the protopathic system as follows:

"The 'protopathic system' then as a whole, consists of fibers of sensibility which supply the skin, the viscera, and all parts of the body, inside and out. It furnishes a low degree of sensibility to the viscera and to the skin, and a special 'deep' kind of sensibility to the muscles, joints and tendons. This system enables one to appreciate a

sense of pain, and temperature, and location, and position, though not to a very delicate extent."

The epicritic system is purely cutaneous and enables us to appreciate light touch, the points of the compass, localization, and minor degrees of temperature, ranging between 22 to 40 degrees S. To quote further:

"Both systems seem to be able to appreciate the sense of pain, but the epicritic sensibility furnishes a more delicate and localized appreciation. Protopathic fibres carry sensations which are badly localized, widely diffused, and sometimes referred to other parts than that of the stimulation. The protopathic fibres are incapable of appreciating light touch, and minor degrees of heat and cold, and pain appreciation is a diffuse tingling and thrilling sensation.

"The material upon which this theory is based, consists of a large number of very carefully studied cases of injuries of the peripheral nerves of the limbs; also of two cases of loss of sensation by division of posterior roots. No studies have been made, apparently, of the very striking cases of section by the surgeon of the trigeminal nerve. In fact, I can find no reference of the application of the theory to the trigeminus. The authors state, however, that 'the whole body, within and without,' is supplied by the protopathic system, and that one set of fibres of this system—those which go to the skin—is identical with the afferent fibres of the sympathetic in the viscera. Another set, which is connected with the deep sensibility, runs in conjunction with the motor nerves. If this be the case for the trigeminal nerve, then it would seem that a clean-cut section of this nerve, such as is made by surgeons, should destroy all the epicritic sensibility, but would leave some, at least, of the protopathic sensibility, that is, an appreciation of movement, of position, of deep pressure, and perhaps some degree of appreciation of extremes of temperature and pain."

The conclusion of Dana's study in two cases is that section of the sensory nerve of the face destroys all sensation, and that this theory does not hold for the head.

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#### MARIE'S VIEWS ON APHASIA.

Not long ago Pierre Marie announced a new theory of aphasia which met with derision from many neurologists and appeared most startling to those who had learned that the third left frontal convolution contains the speech center. We will quote from an article by Dereum (*N. Y. Medical Journal*, January 5).

"Whether or not we agree with the conclusions arrived at by Pierre Marie on aphasia, it is owing alike to his reputation and to

the interests of truth that we lend to his statements an attentive and and unprejudiced ear. The baneful influence of precedent and the thralldom of authority have often impeded human progress, and an occasional pause and salutary realization of the slender basis of fact upon which rest some of our most cherished theories can only prove of benefit. Marie's utterances upon the subject of aphasia are both remarkable and revolutionary. Briefly stated he holds that the chief characteristic of aphasia is an intellectual deficit: that aphasia is a unit, that it is not made up of sensory aphasia on the one hand, or motor aphasia on the other, but that by lesion of the zone of Wernicke, there is established an intellectual deficit for the comprehension of spoken language; that in so-called sensory aphasia or aphasia, of Wernicke, the lesion involves the zone of Wernicke (i. e., the supra-marginal gyrus, the *pli courbe*, and the posterior portions of the two first temporal convolutions); that in so-called motor aphasia there is in addition to a lesion of this zone of Wernicke, also an involvement of the region of the lenticular nucleus. Lesion of the lenticular nucleus gives rise to anarthria, therefore in so-called motor aphasia, or Broca's aphasia, we have merely ordinary Wernicke's aphasia *plus anarthria*. Marie denies that the third left frontal convolution plays any role in aphasia whatever. He believes that the involvement of this convolution seen in so many cases—in half of Marie's cases—is purely a coincidence, due to the extent of the vascular territory obliterated and to nothing more."

Dr. Dercum found in the study of a series of cases that the intellect was disturbed in all. All of fourteen aphasics examined exhibited in an unmistakable manner the intellectual deficit claimed by Marie. Defective utterances of speech were found in all cases. He failed to classify his cases according to the presence or absence of anarthria.

He concludes as follows:

It must be conceded that Marie's view is very attractive. It would indeed appear that aphasia is in reality a unity, that it consists not in a word deafness, not in a word blindness, not in an inability to utter words, but in a difficulty or impairment of the faculty of comprehending language, and that it is due to lesion of the zone of Wernicke. Whether in a given case anarthria is also present depends entirely on the concomitant involvement of the inferior longitudinal fasciculus or isthmus in its passage to the lenticular nucleus and involvement of the lenticular nucleus itself. Whether in a given case on the other hand, alexia is also present, depends upon the involvement of the inferior longitudinal bundle posteriorly in its passage to the visual centres of the occipital lobe.

## REGENERATION OF CENTRAL TRACTS OF THE NERVOUS SYSTEM.

Clarke about a year ago in a paper read before the New York Neurologist Society attempted to answer the question, Do the central tracts of the nervous system regenerate? and offered the following conclusions:

1. Animal experiments failed to provide conclusive data that central tracts of the nervous system ever regenerated, so that the former function was restored. In warm-blooded animals, and in the human species in particular, an abortive attempt on the part of the cord to regenerate was largely, if not solely, confined to fibres of undoubted peripheral type.

2. Histological analysis of cases of hemisection, compression paraplegia, myelitis, and like destructive lesions of the cord failed to show positive evidence that actual structural regeneration of axis cylinders ever occurred in the central nerve tracts of the human spinal cord. In case of complete division of the brain and spinal tracts, there was simply degeneration, followed by sclerosis.

3. A most acceptable reason for non-regeneration of such tracts was shown in that the component nerve fibers did not possess a neurilemma sheath, from which nerve regeneration mainly, if not solely, occurred. This lack in cord and brain tracts, in contrast to the regenerating peripheral nerves, was due possibly to a difference of embryological origin for the two structures of the nervous system.

4. The seven cases cited by Stewart and Hart for cord regeneration, being merely hemisections, either did not fulfill the conditions of tests, or the evidence for regeneration was not definite or convincing.

5. In cases of complete transverse division of the cord there was not sufficient justification, either from experimental or clinical data, to warrant suture of the spinal cord in an attempt to cure the defect.

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SCHLOSSER'S TREATMENT FOR TRIGEMINAL NEURALGIA.

Kiliani (*N. Y. Medical Journal*, December 29) gives his experience with Schlosser's method of treating trigeminal neuralgia. He describes the technic as follows:

"Permit me now to describe, in short, the technique. To make sure that one really injects into the nerve affected with neuralgia, Schlosser injects into the foramen through which the respective



branch emerges into the face, namely, for the first branch the foramen supraorbitale, for the second the infraorbitale, and for the third the dentale inferior. For this purpose Schlosser has devised for his syringe a set of needles of such thick tubing that the edge does not cut at the point of the needle. In that way no arteries, or even veins, are injured by the injection, incredible as it may seem. This point is of special importance, if the injection has to be made into the ganglion Gasseri, in case all three branches are affected. It is impossible to describe the technique exactly, at least in a short paper. It must suffice to say that, in case of an injection into the supraorbital foramen, the needle, being pushed sagittally along the sometimes not very well-defined foramen, must not penetrate the periosteum of the orbit; otherwise the alcohol injected would produce a very pronounced and possibly dangerous retrobulbar edema.

The injection into the second branch is really the easiest, and does not involve any danger.

The injection into the third branch presents the most difficulties; at least, it has given me most trouble. The use of the curved needle devised for the third branch has been given up by Schlosser to a great extent, for reasons which I can appreciate, as it is extremely difficult to feel around the corner, so to speak, in an operation where everything is dependent on the sense of touch.

I may mention here that a successful injection into the inferior dental foramen invariably produces a more or less pronounced tetaniform spasm of the pterygoid and masseter muscles, a mild form of lockjaw, which may last from several days to several weeks. As it is only partial, the patients, who are more or less accustomed to this state of affairs, are quite willing to put up with the condition, if warned beforehand.

To inject into the foramen ovale we use the following procedure: The longest of the three straight needles is pushed through the cheek of the afflicted side about opposite the last molar, the index finger of the left hand is inserted into the mouth as a guide behind the last molar, and the needle then shoved under the periosteum upward along the external pterygoid plate until it is arrested, which takes up about  $2\frac{1}{4}$  inches of the needle. If the handle of the needle, so to speak, is still further lowered, another quarter of an inch can be gained in pushing the needle still further upward toward the base of the skull, when it is definitely arrested. If we feel our way then, backwards, scraping along the bone for about three-eighths of an inch, we feel how the needle enters the foramen ovale, where the injection takes place. It would lead a little too far if I would try to explain how the foramen rotundum is reached without injury to the neighboring parts; but it can be safely done."

## YESTERDAY AND TO-DAY

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### DIET IN TYPHOID FEVER.

There is a distinct tendency at present to be more liberal in the diet of typhoid fever patients, and yet physicians should be more circumspect than ever in regard to this matter. It is not what the patient eats so much as what he can digest and absorb. If the patient never could digest milk, what reason have we to suppose that he can properly digest it when he has typhoid fever? It is necessary to feed carefully and watch what the digestive functions do with it.

Dr. Stokes, after Graves, more than fifty years ago, emphasized the importance of feeding in typhus by relating an incident:

"A lady who had been recently married was attacked with extremely severe petechial fever; she was covered with dark colored maculae, and the disease had run to about the twelfth or thirteenth day. She was attended by several eminent physicians. Her case was an extremely bad one, and her life was all but despaired of. She was violently delirious. Her husband had occasion to leave the house on some business. At the period of the dinner-hour of the family, the servants were cooking a rump of beef and cabbage, and the odour of it filled the house. In her delirium she called for some of the beef and cabbage; she was then, you must understand, in severe fever, and covered with maculae. Her sister, who was attending her, believing she was dying, thought it only right to indulge her, from the feeling that it was right to indulge the request of a dying person. She proceeded to the kitchen, and, as soon as the beef was boiled, cut a very large mess of beef and cabbage; and this was brought up smoking hot to the lady's bedside, when she devoured it with great avidity. Shortly afterwards her husband came in, and was told what had happened. He became terrified, and sent for physicians in every direction. Four or five assembled; time was pressing, and every one agreed that something should be done. At length the late Dr. Harvey, a practical physician of the very first class, arrived. He was laid hold of by the agonized husband, forced up stairs, and his opinion earnestly requested. At that time the stomach-pump was not in fashion, but every one agreed that something decisive should be done, that an emetic should be given, or some extraordinary effort made to get this mess of beef and cabbage out of the lady's stomach. When Dr. Harvey went to the bedside, he found the patient in a tranquil sleep. He turned

round, and when anxiously appealed to what should be done, he said—"You had better wait till she wakens; let her sleep it out." She slept for four or five hours; awoke wonderfully better, and on the following day was out of danger. I do not give you this case to induce you to feed your patient with salt beef and cabbage in fever; but it is very important, as showing that in typhus fever, with maculæ, the stomach is capable not only of digesting such a coarse article of food as salt beef, but that even such food may have a good effect.

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### ULCERATIVE STOMATITIS.

There are some remedial means which have a very evanescent popularity. In some diseases a different medicine is prescribed every year. A few drugs remain in use for decades. One of these is chlorate of potash whose specific effect in ulcerative stomatitis was observed more than 60 years ago. We quote from an article by West (*Med. Gaz.*, 1848):

"Various internal remedies and local applications have been at different times recommended for *the cure of this affection*. Tonics have been much employed, and the supposed analogy between this state of the gums and that which exists in scurvy has led practitioners to give the preference to remedies supposed to be possessed of antiscorbutic properties. Lotions of alum, or burnt alum in substance, or the chloride of lime in powder, have all been used locally with more or less benefit. It was my custom also to prescribe these remedies in cases of ulcerative stomatitis; but since the chlorate of potash was introduced to the notice of the profession by Dr. Hunt, I have learnt to rely upon it almost exclusively. It appears, indeed, almost to deserve the name of a specific in this affection: for a marked improvement seldom fails to be observed in the patient's condition after it has been administered for two or three days, and in a week or ten days the cure is generally complete. Three grains every four hours, dissolved in water, and sweetened, is a sufficient dose for a child three years old, and five grains every four hours is the largest quantity that I have administered to a child eight or nine. If the bowels be constipated, a purgative should be previously administered; but there seems to be no form nor any stage of the affection in which the chlorate of potash is not useful. The diet should be light but nutritious, and quinine and other tonics are sometimes serviceable if the child's health should continue feeble after the local malady has been cured."

This treatment holds good even today and in spite of a careful trial of other antiseptics the writer feels that potassium chlorate is superior to other drugs for internal and local use.

## THE MICROSCOPE AND RENAL DISEASE.

Only recently a few clinicians have rather sharply censured the practitioners who make diagnosis of kidney disease from the chemical and microscopical examination of the urine. One must always take into consideration the history and attending symptoms before pronouncing a final verdict.

We can do no better than to repeat the words of Bence-Jones (*Med. Times and Gazette*, 1853).

"You will say, what is to guide me in my prognosis and treatment? I reply, do not trust alone to the microscopic appearance in the urine, but take the case as a whole. In a case of consumption, it is rarely that you can determine by the stethoscope alone the course which the disease will follow, or the best treatment to be adopted. The stethoscope may give most important assistance, but the history, the general symptoms, the special circumstances, will still more correctly determine your judgment as to the duration of the case and the most suitable treatment. So, also, in renal diseases. The microscopic examination may give most valuable knowledge regarding the state of the kidney, *e. g.*, the pus may indicate suppurative inflammation; the blood, a loaded state of vessels; the fibrinous casts, the degree of recent congestion; the fatty matter, the duration, perhaps, of the evil; but it is far more important to take all the features of the case than to make the microscope the sole foundation for your prognosis and treatment.

In albuminuria, as in other diseases, take the history first. If you can trace the complaint to scarlet fever, to sudden cold, or to pregnancy, the chance of recovery is far more favorable than if the disease has insensibly approached. I could give you many instances of recovery where the disease commenced from such causes; but I know of no perfect recoveries where a bad state of health has given rise to disease of the kidney as a secondary consequence of a previous cachectic state."

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SOME POINTS IN UTERINE HEMORRHAGE.

Every practitioner now becomes adept in manipulating the uterus after labor. The Crede method of expelling the placenta has taught us how to stimulate the uterus to firm contraction and has given us the most valuable means for controlling uterine hemorrhage. As long as the uterus is firmly contracted no alarming bleeding can occur unless it is from an injury to the uterus itself. That these fundamental principles were not always a part of professional knowledge

appears from an article by Labatt (*Dublin Quarterly Jour.*, 1858). This physician was engaged to attend a woman in confinement who had previously suffered from serious post partum hemorrhage and relates the following:

"Her labour coming on at the expected time, I was summoned, and found her walking through her chamber, with pains frequent and sharp, and greatly depressed in spirits. I kept her out of bed until the first stage of labor was completed, and the child's head on the perineum: she was then put to bed, and the pains becoming strong, the head was soon expelled. Taking the necessary precaution to insure a slow progress of the child through the passages, I applied my hand on the abdomen, and followed the contracting uterus with a firm pressure. The child being born, I immediately grasped the uterus, which was well contracted, in my hand and firmly maintained it in that condition, and having given a draught, which I had in readiness, of twenty-five drops of Battley's sedative liquor, forty drops of volatile aromatic spirit and ten drachms of camphor mixture, I turned the patient on her back, and remained at the bedside for five hours, with the uterus steadily, and without one moment's intermission, secured in the manner I have described. The placenta was thrown off in an hour after the child, and no hemorrhage or fainting followed.

Between five and six hours after delivery, I proceeded carefully to substitute for the pressure made with my hands, a towel folded like a pad, placed over the uterus, and secured by a roller passed tightly round the loins, and then, having had the bed made comfortable and given the patient some gruel, she fell asleep, and awoke in two hours, much refreshed, and no untoward symptom followed. She had a good supply of milk for her baby on the third day, was in the drawing-room on the fifteenth, and abroad in her carriage early in the fourth week.

I think myself justified in attributing much of the success in the treatment of this case to the great caution used in securing the contraction of the uterus, following up, as I did, the practice formerly recommended by Mr. Charles White of Manchester, and more recently by the late Dr. Clarke of this city.

In my lectures, twenty years ago, I thought it sufficient to recommend the pupils in the Lying-in Hospital to apply, immediately after the birth of the child, a pad over the uterus, secured by a well-adjusted binder passed round the hips: and this practice may suffice in ordinary cases: but when we have reason to apprehend hemorrhage after delivery I feel assured, by ample experience, that uterine contraction and consequent avoidance of hemorrhage will be better ef-



feeted and secured by the hand, in the manner I have mentiond, than by any roller, however judiciously contrived: and the pressure should be steadily kept up for four, five, or six hours, according to circumstances. Having often observed the salutary effects of the adoption of this practice at one time, and the bad effects of the neglect of it at another, in the same patient, I can with confidence recommend it to the attention of my junior brethren, who will please observe the more important points in the management of the case I have detailed. First, I kept the patient out of bed, as advised by Dr. Denman, till the child was on the point of being born, being of opinion with Dr. Denman that the erect position is favorable to uterine contraction. Secondly, I allowed the child to be entirely expelled by the action of the uterus, and even opposed some resistance to its progress through the passages, and immediately after administered a cordial anodyne draught, which I have for many years been in the habit of doing in such cases, and often with great advantage, always combining the opiate with a cordial. Thirdly, I firmly held the uterine tumor in my grasp for several hours, and then applied a pad and roller. It was the invariable practice of the old practitioners in this city to give a glass of burnt brandy with nutmeg, immediately after delivery, and I think such a cordial will often be found beneficial, by promoting uterine contraction, and thereby favoring the separation and expulsion of the placenta, and I can not say that I have ever known it to produce injurious consequences.

I can not too strongly impress upon the junior practitioner the necessity of closely watching his hemorrhagic patient for some hours after all alarming symptoms have subsided, having known several cases of sudden and unexpected sinking and death long after all danger was supposed to have ceased."

Dr. Labatt then related the history of a series of cases of hemorrhage. He denied emphatically that large doses of opium should be given for uterine hemorrhage. He gave some excellent advice from which we quote:

"It is generally supposed that if, after the expulsion of the placenta the uterus be felt well contracted, small, round, and firm over the pubis, there is no reason to apprehend hemorrhage; this may be true to a certain extent; nevertheless if due care be not taken to maintain this state of salutary contraction by the means already advised, the uterus may relax, and hemorrhage ensue; therefore the cautious attendant will patiently continue his preventive measures till all immediate danger of hemorrhage shall have subsided, and then apply his pad and roller.

I would here beg to offer a suggestion, for the guidance of the young practitioner in his attendance during the anxious and critical period of childbirth. I would strongly urge him to remain with his patient as much as he possibly can, from the commencement of labor to its termination; his presence will be acceptable to the friends of the patient, comfortable and cheering to herself, and she will have the benefit of seasonable advice and assistance on any of those emergencies which every now and then unexpectedly occur in the progress of labor. But this is not all: the presence of the confidential medical attendant, and his humane and kind deportment, will inspire the sufferer with confidence and hope, and thus, by the well-known influence of mental impressions on the action of the uterus, will tend to lead the case to a speedy and happy issue. I do not pretend to say that such is the invariable result, for I have known cases to go on slowly where the practitioner remained for hours on the spot and where, during his short absence, pains suddenly increased, and accomplished the delivery before his return; but I have seen more than sufficient to justify me in asserting, that if accouchers would remain more at the bedside of the patient than is the practice of the present day, and sometimes pretend to assist, with the intention, as Dr. Denman remarks, of giving confidence to the patient, or composing her mind, the duration of labor and sufferings of the patient would often be abridged; and I dare to say that the success of Dr. Hamilton, who assures us that "no patient under his charge for the last thirty-five years has been above twenty-four hours in labor, and excepting in cases of disproportion, none so long," was more owing to this circumstance than to any direct manual aid he may have afforded.

Several years ago, I was requested by an eminent practitioner to wait with a lady, upon whom he had been some hours in attendance, in labor of her first child while he paid an urgent visit in a distant part of the city. The labor, he said, was proceeding favorably, the pains strong and regular. On my going to her apartments, the patient manifested discontent and want of confidence, which I could not remove. The labor slackened, the pains became weaker, irregular, and during two hours that I remained, no progress was made, and on his return the doctor was disappointed and surprised at the change that had taken place. Ineffectual pains continued to harass the patient for several hours, when circumstances occurred to require manual aid, and a dead child was extracted with the forceps. My friend, who was an intelligent and observing man, candidly expressed great regret at having left the patient, who would, he thought, have been safely delivered without assistance, had he remained with her.

Upon another occasion I was hastily called to the assistance of a lady in active labor with her fourth child—her usual attendant, in whom she had great confidence, being engaged elsewhere; the nurse-tender said the pains were strong, and labor far advanced, and that the lady who always had quick labors would very shortly be well. However, on the lady being told of the absence of her own friend, and seeing a stranger at her bedside she became much dispirited, the labor flagged, and made no advance for a considerable time, till her attendant made his appearance, when pains soon returned, and she was speedily delivered. Cases like these, showing how much the uterine functions are influenced by the state of the mind, are by no means unfrequent and should be borne in mind by practitioners in midwifery.

I wish to record the result of my experience upon another subject which has divided the opinions of physiologists and physicians; I allude to the alleged recurrence of the menstrual discharge during pregnancy. Females have often assured me of their having regular monthly discharges during the whole or a portion of the period of pregnancy. On closely investigating these cases, however I invariably discovered, that the characteristic marks of natural and regular menstruation were for the most part absent. The discharge not returning with the usual regularity as to time, nor continuing uninterruptedly the usual number of days, the fluid discharge also differing in quantity and quality from the true menstrual secretion; and it is further worthy of remark, that in several cases which came under my immediate observation, females who asserted that they menstruated while pregnant acknowledged that they had not on such occasions certain feelings which accompanied their usual monthly periods. I may, therefore, safely affirm, that I have not, during a pretty extensive practice of forty years, seen a case of regular menstruation during pregnancy, the instances which occurred in my practice of discharge of blood from the vagina during utero-gestation being obviously cases of pure hemorrhage, so that I feel strongly disposed to lay it down as a practical axiom, that pregnant women never menstruate.

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#### THE EFFECT OF BELLADONA IN ARRESTING THE SECRETION OF MILK.

Fifield (*Lancet*, July 24, 1858,) in a very lucid style, relates some of the early experiences with belladonna as an antigalactagogue. This well known therapeutic effect needs very little advertisement at present, but it is interesting to note the studies of the early masters. Mr. Fifield related:

In looking amongst some dusty volumes of old Magazines, I find that the use of belladonna in similar cases was known as far back as the year 1829:

"M. Ranque, chief physician at Hotel Dieu, at Orleans, employs to diminish the sensibility of the mammary gland, on which the secretion of milk depends, frictions morning and evening upon the breasts with the following liniment: Laurel water, two ounces; sulphuric ether, one ounce; extract of belladonna, two scruples. M. Ranque prescribes at the same time rigid diet and sudorific drinks. M. Ranque, it is said, employs this liniment with success in engorgements of the testicle after antiphlogistics:—*Journal des Progress*, 1829, copied into the *Boston Medical and Surgical Journal* of that year."

The best description of the external use of belladonna, and its favorable effects in threatened milk abscess, is that given by Dr. Schnur, in the *Dublin Journal* 1834. I find nowhere any mention of the use of atropine as recollected by Dr. Goolden. It will be seen by the cases given, that it is very doubtful whether colchicum has any effect at all. The editor, after speaking of milk abscess, its causes and treatment, uses the following language:—

"Ranque, impressed with certain theoretical ideas, which it is unnecessary to discuss here, was led to the use of the following liniment:—extract of belladonna, two scruples; laurel water, two ounces; sulphuric ether, one ounce. This must be well shaken before it is used. It is to be rubbed into the breasts as high as the axillæ, morning and evening and the breast must be covered with a fine flannel soaked in the liniment. This proceeding must be repeated every day until the swelling disappears which is usually on the second or third day. The ether has a smell which is very disagreeable to some but they ought to bear with it for it adds essentially to the efficacy of the remedy. The subject is of great importance, and, at the risk of being tedious, I shall give the whole of what Dr. Schnur says on the following cases:—

E. M., a Jewess, short and slender, was married when thirteen years old, to a husband aged fourteen. Immediately after marriage she became subject to hysteria, and the catamenia grew irregular. On the third year after marriage she became pregnant, and, arriving at her full time, she was delivered of a small but healthy child. She persisted in attempting to nurse her child, although her breasts were ill-developed and her general health far too weakly to authorize the attempt. Six hours after its birth the infant was applied to the breast, when she experienced flying stitches passing through them, which soon amounted to positive and considerable pain. The cir-

cumference of the mammae now increased in size, and in twenty-four hours it was found impossible to extract a drop of milk from them, either by rubbing, pressing or drawing them. The breasts had lost their elastic feel, their surface did not yield to the pressure of the finger, neither was it hot and red like the rest of the skin, but it was white and blanched. Her feet were cold, tongue clean, and the bowels gently opened by a saline aperient. The patient tossed about in her bed, and the pain in her breasts was so excessive as to cause her to rave and faint. Her pulse was small feeble, and contracted, and she was afflicted with constriction of the chest and spasms of the muscles of the neck. Before my arrival the attendants had tried inunction with almond oil, the application of bags containing dried herbs, warmed, fomentations of camomile, etc., and were just going to apply a poultice of linseed meal. Under these circumstances there appeared to be an urgent necessity for calming the general nervous irritability and diminishing the pain felt in the breasts. To effect this purpose, nothing seemed better calculated than Ranque's liniment, and I therefore caused it to be applied in my presence. After the flannel had been on one hour the skin of the breasts became slightly red, and the patient expressed considerable relief. The tendency to fainting now vanished, and the pulse lost its irritable contracted stroke: nevertheless, she complained of the smell of ether, which, she said, gave her the headache, and I subsequently substituted alcohol in its place. With the diminution of pain, the hardness of the breasts likewise subsided, and in forty-eight hours all traces of the local affection vanished. (Might not the remarkable relief from pain be attributed in part to the anaesthetic effect of the ether. How closely Dr. Schnur passed by the discovery!)

In two somewhat similar cases, says Dr. Schnur, Ranque's liniment produced the most beneficial effects, although not so rapidly as in that just related. In both the smell of the ether was complained of, but I persevered in its use being convinced that it contributes much to the efficacy of the remedy in causing that redness of the skin which seems essential to its action. (Was not the belladonna more rapidly absorbed from an almost blistered surface?) Although these cases prove that this remedy possesses considerable power (mark the modesty of Dr. Schnur), I by no means wish to assert that it is applicable to all cases, or that its success is invariable.

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#### SANTONIN.

While santonin is the most efficient anthelmintic against the round worm, its other therapeutic uses are usually overlooked. It is



a powerful nerve sedative and many restless children have been dosed with this drug on the assumption that worms may be present, and the consequent improvement in the nervous symptoms have been cited as indubitable proof that worms were really present, although none were discovered in the stools. Not long ago Dr. Frank Lydston suggested that santonin can be used as a substitute for the bromides in epilepsy.

Many children have recurrent intestinal indigestion and repeated doses of santonin seem to act as a powerful tonic to the digestive functions. It is for this reason that "worm candy" causes an improvement in some of these children. We have seen a child with repeated attacks of nervous frenzy improve very much after the administration of santonin.

Another use of santonin can be best given by reproducing an abstract (*Amer. Jour. of Med. Sciences*, 1886): Dr. J. Cheron proposes the use of santonin in the treatment of amenorrhœa and dysmenorrhœa (*Revue de Therapeutique*, Nov. 1, 1885). He prefaces his observations on this therapeutic application of the remedy with an account of its physiological actions.

Santonin is but slightly soluble in water, but dissolves in alcohol in the proportion of 1 to 40. It is a vascular medicament, and it acts on the organic muscular fibre in the same manner as ergot. It perverts vision, and the senses of taste and odor. Objects seen have a yellowish or violet color, and the urine, which is increased in amount, has a yellow tint when acid, red when alkaline.

Santonin acts as a tonic to the stomach, and increases the appetite and the power of digestion. As is well known, it is a vermifuge, and expels the *ascarides lumbricoides* with certainty.

Dr. Cheron has obtained excellent results from its use in amenorrhœa and dysmenorrhœa, more especially in cases characterized by anemia, chlorosis, and general depression of the vital forces, about the period of puberty when the menstrual function is tardily and imperfectly established.

He advises the following:

Santonin  $\bar{3}$ ss. Make 40 pills by the aid of gum-tragacanth and glycerine. Two of these are to be taken before each meal. Also

Santonin ..... 4 grains.

Alcohol .....  $\bar{3}$ ss.

Gum julep .....  $\bar{3}$ ij.

A tablespoonful contains about one grain, and two may be taken before each meal.

The efficacy of this drug in amenorrhœa and uterine colic has

since that time received additional endorsement. It is more than probable that a much wider range of usefulness may be found, if more attention is given to this medicament.

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## SOCIETY PROCEEDINGS

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### BETHESDA PEDIATRIC SOCIETY.

Meeting of the Bethesda Pediatric Society, of December 21st, 1906. Held at Dr. Albrecht's office, Humboldt Building. The Pres. Dr. Geo. M. Tuttle, in the chair.

Paper by Drs. E. W. Saunders and W. L. Johnson, read by Dr. Johnson, on "A Case of So-Called Cyclic Vomiting with Hepatic Insufficiency." The history of a boy was given (G. v W.) aged two years, who, up to this time had had several attacks similar to the ones about to be related, but, as they were not under his observation, Dr. S. simply gave the mother's history of them.

The first attack, October 1905, was at his home in G. Prior to this, his diet was very simple, milk, stale bread, asparagus tips, spinach, baked apple, soft boiled egg and perhaps, a little scraped beef. There was severe repeated vomiting, some abdominal distress at onset, temperature 99.4 to 100.4, great depression, insomnia and thirst. October 9th, he was brought to St. Louis. In spite of rational measures he continued to vomit until October 10th, 6:30 p. m., when the stomach was washed. After this he retained a little apollinaris water and champagne.

From October 12th to 14th, he improved rapidly and he went home on the latter day. The urine was examined for albumin, sugar, casts and acetone, but none found. Not finding acetone caused Dr. S. to disregard cyclic vomiting for the time, and since the child had been given large doses of Fowler's Solution, he concluded it was a case of arsenical poisoning.

March 23rd, 1906, the boy had another attack and this time acetone was found and since this there have been repeated attacks, acetone and diacetic acid being found in every instance during and for some time after the attack.

Finally on account of the evidence of hepatic insufficiency as evidenced by the clay-colored stools, Dr. S. used Sodium glycocholate with apparently excellent results, the boy improving very materially, and the attacks with but one exception, not recurring. [Essayists' abstract.]

Further remarks on this interesting case were made by Dr. Saun-

ders, and Dr. Warfield spoke of data that had been gained by numerous examinations of the urine and stools. He added, "There is not very much that I can add to the history of this very interesting case as outlined by the two previous speakers. It was through the kindness of Dr. Saunders that I saw the case first last August.

There is one point that strikes me as being of particular interest, namely, the complete acholia; the stools reminded one of a case of severe catarrhal jaundice. There was the same odor, pasty color, greasy appearance that characterizes the discharges of such cases. In spite, however, of this condition of the stools there was absolutely no jaundice in the child, not even the conjunctivæ were colored. It was apparently a total suppression of the secretion of bile, the cause of which was absolutely unknown.

Knowing that the bile salts are the true stimuli of the bile secretion that these salts poured into the intestine are not lost, but are absorbed in the blood to be again stimuli for the bile, it occurred to me that sodium glycocholate might possibly be of value in the treatment. Certainly it would do no harm, and it seemed a rational method of procedure. Combined with this was suggested resorcin as an intestinal antiseptic. However, this was not well borne, and Dr. Johnson later substituted sulpho-carbolate of zinc. It is exceedingly interesting that under this treatment the child has been perfectly well, and has not had up to this time a return of the attacks to which it had been previously so subject.

It was unfortunate that the  $\text{NH}_3$  content of the urine was not quantitatively estimated. If the liver is at fault it might be that, as Dr. Williams of Baltimore has shown for pernicious vomiting of pregnancy, the free  $\text{NH}_3$  is excreted in large quantities. In future I believe this is a point to be borne in mind.

The urine showed a great amount of acetone and diacetic acid, but curiously enough, not until the second day of the August attack much alkali had been administered and retained. We found no indican, but microscopically in one specimen cystin crystals were seen. [Speakers' resume.]

Dr. Zahorsky related a case in which, several years ago, he had diagnosed this disease, and spoke of the relation of acetone in the urine to this condition.

Dr. Bleyer drew attention to a puzzling condition in these cases, namely that, although it seems most probable that an hepatic insufficiency exists and may be the starting point of disturbances, that certain of the functions of the liver seem to continue undisturbed. For example, should liver action be interfered with, we should expect a

diminution in the production of indican, which, on the contrary seems to increase with the gravity of the cases. Again, sugar metabolism does not seem to be interfered with, sugar is not found in the urine of these cases. Especially should variations in these functions be observed if, as Rudolf Fischl and Bayrac think, they are of purely nervous origin.

Dr. Warfield took issue with Dr. Bleyer, on his statement that the indoxyls and skatoxyls were produced in the liver, and stated furthermore that in the case spoken of, indican had been absent.

Dr. Bleyer said that he had been misunderstood, that he had not meant that indoxyls were produced in the liver, but that it was the function of the liver to transform the poisonous indoxyls into sulphonates usually of potassium or sodium, which appeared in the urine as indican, and that the persistence of this function suggested the possibility of a purely intestinal source of the trouble.

Dr. Saunders spoke of the signs of hepatic insufficiency and pointed out that cystin found in the urine of this case gave additional weight to the interference with liver function.

Dr. Tuttle said that he thought that the disease (cyclic vomiting) was much more common in infants than was recognized, and had no pathognomonic sign. He thought that many mild cases existed and the condition should be kept always in mind. He recalled half dozen cases of this trouble.

Whatever the source of the trouble, he felt that Nature was trying to rid the stomach of some injurious substance. In one of his cases, the mother of the child is always able to tell when an attack is coming on by the irritability of the child, and in another, by the odor of its breath.

A. S. BLEYER, Secretary.

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## BOOK REVIEWS

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**GENTO-URINARY DISEASES AND SYPHILIS.** By Henry H. Morton, M. D., Clinical Professor of Genito-Urinary Diseases in the Long Island College Hospital; Genito-Urinary Surgeon to the Long Island and Kings County Hospitals, and the Polhemus Memorial Clinic. Illustrated with 158 Half-tone and Photo-engravings and 7 Full-page Colored Plates. *Second Edition, Revised and Enlarged.* Royal Octavo, 500 Pages. Bound in Extra Cloth. Price, \$4.00, net. F. A. Davis Company, Publishers, 1914-16 Cherry Street, Philadelphia, Pa.

Morton has carefully and completely revised the material contained in the first edition, and has succeeded in presenting the subjects considered as they are understood at the present time. Many chapters have been rewritten. The reviewer has been impressed with the care and thoroughness shown. The chapters on Diseases of the

Prostate are quite good. Syphilis has not been accorded much space. The author presents an appendix which is to be commended, since it contains an account of the methods of preparing and examining specimens. The plates are satisfactory and the print, paper, and general appearance of the work speak well for the publishers.

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A COMPEND ON GENITO-URINARY DISEASES AND SYPHILIS, INCLUDING THEIR SURGERY AND TREATMENT. By Chas. S. Hirsch, M. D., Asst. in the Genito-Urinary Surgical Department, Jefferson Medical College Hospital. \$1.00. Illustrated. Philadelphia P. Blakiston's Son & Co., 1012 Walnut St. 1906.

Hirsch's booklet is far more than a common compend. He presents a compact volume which treats of the diseases tersely. Unnecessary detail and rare affections have been duly omitted. The student and the general practitioner will find the booklet of value.

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SYLLABUS OF LECTURES ON HUMAN EMBRYOLOGY, an introduction to the study of Obstetrics and Gynecology for Medical Students and Practitioners; with a Glossary of Embryological Terms. By Walter Porter Manton, M. D., Professor of Clinical Gynecology and Professor Adjunct of Obstetrics in the Detroit College of Medicine; Fellow of the Zoological Society of London, of the Michigan Academy of Sciences, etc., etc. Third Edition. Revised and Enlarged. Illustrated with a colored frontispiece and numerous outline drawings. 12mo. 136 Pages; Interleaved throughout for adding notes. Bound in Extra Cloth. Price \$1.25, net. F. A. Davis Company, 1914-16 Cherry Street, Philadelphia, Pa.

This is a handy volume and, as an outline of the subject, reliable. More attention is given to the anatomy of the female genital organs than is necessary for the work and the subject.

The study of embryology is helpful in all branches—and while the functions of organs derived from given layers are not by any means always similar, still a knowledge of their formation, and, by the way, of their failure to unite, is necessary for an intelligent understanding of certain malformations. The book should be read.

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PRACTICAL DIETETICS, with reference to Diet in Disease. By Alida Frances Pattee. Graduate, Boston Normal School of Household Arts. Late Instructor in Dietetics, Bellevue Training School for Nurses, Bellevue Hospital, New York City. Special Lecturer at Bellevue, Mount Sinai, Hahnemann, and the Flower Hospital Training Schools for Nurses, New York City; St. Vincent de Paul Hospital, Brockville, Ontario, Canada. Fourth Edition. 12mo. cloth. 300 pages. Price \$1.00 net. By mail \$1.10. C. O. D. \$1.25. A. F. Pattee, Publisher, 52 West 39th Street, New York.

This excellent guide can be generally recommended to physicians and nurses.



ST. LOUIS

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EDITORIAL COMMENT

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THE MEDICAL INSPECTION OF SCHOOLS.

It will not be long until the State will look after the health and physical development of children as well as their intellectual growth. The practical results, in New York are astounding, and it is inconceivable how those in charge of our municipal school systems can neglect the institution of those methods which promise so much to the physical welfare of the younger generation. Prophylaxis is the guiding principle everywhere and the time is not far distant when the acute contagious diseases will be, like smallpox, among the rarer epidemics. What terrible neglect it is to allow a child with nasal diphtheria, for example, to attend school a week or more before he is isolated! Why should the child be tortured with prolonged daily study, who has a defect in vision or hearing?

The function of school inspection has been well stated by Lovett: First, to detect infectious diseases in its early stage, thus cutting down the danger of contagion; second, to detect and cure or provide for defective children; third, to improve school conditions.

What infectious diseases should be included under the contagious diseases necessary for isolation? Upon a few all are agreed, but there are others—the acute respiratory infections, for example—to which serious objections might be offered, if an attempt be made to place them in the class which needs isolation.

No doubt, this problem will be gradually solved, but there is already enough work so that the organization of municipal medical inspection of schools can be commenced at once.

## ADENOIDS AND TRUANCY.

The truant is no longer to be punished with the whip, or staying after school. Superintendent Maxwell, of New York, reports that a majority of the boys in the truant schools suffer from adenoids and enlarged tonsils. It will be wise, therefore, to consult a surgeon if your child has a tendency to go fishing instead of studying. The punishment will be inflicted by means of the tonsillotome and not the hazel switch.

But, really, it is astonishing how certain mental aberrations or weaknesses seem to be aggravated by physical defects, and recent investigations, especially in the inspection of schools, have shown how often the former depend on the latter. Even physicians should be better taught to search for physical defects. So many of them are overlooked for many years. It is a pity that the general practitioner can not make simple tests in regard to sight and hearing. We have a large number of tests to determine the actual function of the stomach. Who will furnish us with a simple means of testing the function of the eyes or the ears?

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## BYRON ROBINSON.

We were delighted to find the January number of the *American Medical Compend* devoted entirely to the work of Dr. Byron Robinson. "The name Byron Robinson as an original investigator is a familiar one in medical literature." (Senn.) The readers of the *Courier of Medicine* are familiar with the remarkable anatomical and pathological labors of this man since he has been a frequent contributor to its original article columns. His work may aptly be termed stupendous, since his investigations run into many hundreds. At last his labors are receiving a general acknowledgment as to their intrinsic value. "In the last edition of Gray's Anatomy his name is mentioned forty times; many more by far than any other." Anatomists and surgeons throughout the world have expressed their highest esteem of his valuable research work.

It was he who named the omentum the "policeman of the belly," His gigantic work, "The Histology and Physiology of the Peritoneum" has been pronounced a classic by many authorities. "Landmarks in Gynecology" is another work of great merit. His name is now applied to a large number of anatomical structures, as, "The Circle of Byron Robinson" (utero-ovarian vascular circle), the "abdominal brain," "oligemic uterine zones," etc. His anatomical

studies of splanchnoptosia must likewise be placed among his greatest achievements. Truly, the American scientific world has reason to be proud of Byron Robinson.

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### INDIGESTION AS A CAUSE OF OTHER DISEASES.

White has recently made a study of the statistics of indigestion in dermatological patients. He finds over fifty per cent. of the patients suffer from stomachic indigestion. From this he claims to have substantiated the theory of an etiological association of dyspepsia and skin diseases. To us it appears on the contrary that this is about the percentage of dyspepsia in people in general. Dyspepsia is a most common functional and organic disorder. A similar percentage, we have no doubt, will be found in those who suffer from diseases of the nose, or in women who have pelvic symptoms. It does not prove any etiological relationship. It is the same with the theory of indigestion and eczema. It probably has only a very obscure relationship. Such statistical proof has little value.

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### THE TRYPSIN TREATMENT OF CANCER.

The recent report of Graves, of Boston, in regard to the trypsin treatment of cancer is rather encouraging. He found that a discrete cancerous node systematically attacked by injections of trypsin shrinks and becomes hard and fibrous, or disappears. He believes that the experiments with this ferment should be continued, inasmuch as no serious results can occur.

Like many therapeutic agents trypsin seems to deserve a place in our armamentarium, but it will probably not displace radical surgical interference in operable cases.

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### CURRENT EDITORIAL TOPICS.

#### THE OPSONIC INDEX AND THE THROAT.

The throat is constantly exposed to infections from the inspired air and from bacteria constantly present. The warmth and moisture favor the multiplication of bacteria. The *New York Medical Journal* asks the question why infection does not constantly result, and then continues: "The pathogenic germ and the subject being in conjunction, what prevents the development of disease? Recent studies in hamatology have brought to our knowledge the existence of certain protective substances in the human blood which have the

power to limit or prevent general infection. It had long been believed that leucocytes were the sole reliance in the defense of the body against the pathogenic bacteria. It is now held that phagocytosis does not occur at all, unless there are present certain substances in the serum which act upon the bacteria so that they fall an easy prey to the leucocytes. These substances, the opsonins, have been called bacteriotropic substances. It appears to be well established that without their aid the leucocytes are powerless against the bacteria.\*\*\*

"A beautiful illustration of the application of mathematics to medicine, and apparently unique in its attempt to express susceptibility to disease by a definite numerical formula, is afforded by what Leishman and Wright have denominated the opsonic index. The special value of the opsonic index in relation to throat inflammations consists in our ability to determine by it, in the individual instance, whether susceptibility or immunity exists as regards certain infections, such as diphtheria, for instance. It is capable therefore of offering practical suggestions with regard to treatment. For example, it might decide whether or not it was a necessity to give an immunizing dose of antitoxine after an individual had been exposed to infection, especially if diphtheria bacilli were found in cultures taken from his throat. Advances in this department of study all point in the direction of the formerly unsuspected prophylactic powers of the blood serum, and suggest the conservation of this all important property, not only by special 'vaccines,' but also by resort to general analeptic and hygienic measures."

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### THE PROTOZOA.

The study of pathogenic protozoa has only in recent years received any special attention, and most text-books now make another class of diseases besides the infectious or bacterial diseases, namely, those due to animal micro-organisms. Yet we know very little about these small animals as a class. *American Medicine* comments on the importance of their study.

To quote: "The importance of the study of protozoa is well brought out by Calkins in the above paper, and he mentions the well-known facts as to malaria, dysentery, trypanosomiasis, the diseases due to species of piroplasma, and those due to spirochæta—relapsing fever and syphilis. Indeed, of the four groups of protozoa—rhizopods, flagellates, sporozoa, and infusoria—only one, the infusoria, is not yet represented among the disease-producing ones. He suggests that yellow fever is due to a flagellate and that possibly cancer is

due to a protozoon, which will eventually be found by a lucky hit in staining. The enormous number of protozoa found in lower animals makes it necessary for the worker to devote his whole time to this specialty if he is to make the happy discovery. The rewards are enormous, for the cure of hydrophobia alone by a specific like thymol would remove a dreadful fear which hangs like a pall upon the whole human race. No other disease has such popular terrors. The cure of yellow fever is also a possibility—indeed, all the scourges of the human race may be conquered in the near future. Perhaps it is a mere detail of staining which prevents the discovery of the causes of measles, scarlatina and the other exanthems, all of which are generally believed to be due to protozoa.”

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## THE ACCIDENTAL CONTAMINATION OF ANTITOXINES.

Few of our readers can have forgotten the disastrous consequences of the use of contaminated antitoxine a few years ago in St. Louis. In that instance it was the virus of tetanus that had been mingled with the therapeutic serum employed, and several deaths from that dreadful disease resulted. Now comes the news that in the Philippine Islands a number of prisoners have lost their lives in consequence of having been treated with serum contaminated with the germ of the plague. These sad occurrences are not unprecedented, except perhaps in the number of deaths they occasioned, but for several reasons they seem to call for particular comment. In the first place, they both took place within the dominions of the United States. This fact may be quite fortuitous, though we fear that in some quarters it may be taken to give color to a suspicion that we Americans are particularly prone to carelessness in the management of deadly agents. If we would stamp out such a suspicion, we must be superlatively careful in the future, and quite apart, of course, from the natural desire to amend our record, the horrible nature of the occurrences should make us bestir ourselves to establish a *tabula rasa*.

In the next place, both calamities took place as the result of the employment of agents produced by laboratories of municipal if not of national authorization. We have heard much of the alleged necessity of restricting the issue of organic therapeutical products to those turned out under government authority, or at least to those that had been subjected to governmental inspection. The cry never had any rational foundation, but it fell in with our democratic



reverence for authority, and so it prevailed. Private producers, having every incentive to turn none but irreproachable products, have in some instances been swamped by the insensate demand for authoritative articles.

But mistakes may occur in private laboratories as well as in those that are under governmental supervision. Is there, then, no remedy for errors that have resulted so disastrously? Danger may perhaps to a great extent be avoided by restricting the production of single laboratories to some one antitoxine. If, for example, the New York laboratory turns out a superior article of diphtheria antitoxine, let it supply that product to other cities and depend upon them for its supply of other antitoxic medicaments, drawing a single one from each of them.—*New York Medical Journal*.

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### A CARCINOMA PARASITE.

In commenting on the recent work of the New York State Cancer Laboratory at Buffalo, as reported by Dr. Gaylord, its pathologist, at the one hundred and first annual meeting of the State Medical Society, Prof. Garry N. Calkins, of the department of zoology, Columbia University, who is himself the biologist of the laboratory, has made a statement which is of special interest as coming from a source of such acknowledged authority in biological research. All attempts to demonstrate the existence of a parasite in either mouse carcinoma or the rat carcinoma which has been successfully transplanted for years in the Buffalo laboratory, he says, had proved futile until June, 1906, when an important discovery was made which renders it probable that a specific parasite accompanies carcinoma in mice. By the use of Levaditi's method for demonstrating the specific organism of syphilis, it was found that peculiar spirally wound organisms, belonging to the genus spirochete, were present within and around every mouse tumor examined. These spirochete were present in a young, rapidly growing, non-ulcerated primary tumor in a mouse obtained from Massachusetts and in every strain of transplanted tumors in the Buffalo laboratory. This discovery, Professor Calkins goes on to say, would appear to be of the utmost importance in the future study of the cause, development and possible cure of cancer. It would be premature to declare that these organisms are the cause of mice carcinoma; but their presence in and around the cancer cells and their absence elsewhere is a sufficient justification for continuing research and experimentation along the line

of the parasitic hypothesis of human cancer. Of the twenty known species of spirochete, five are admittedly pathogenic, the organisms of syphilis, relapsing fever, African tick fever, and of special forms of disease in chickens and in ducks. While all these spirochetes are on the very border line between the animal and vegetable kingdoms, their animal relatives being protozoa, such as trypanosomata, and their plant relatives the spiral bacteria, the preponderance of evidence is in favor of the animal origin of the organisms. During the past ten years many supposed cancer germs have been discovered and described, but they have all turned out to be false leads; it having been demonstrated in every instance that the so-called germ was not a true organism. But there is no question, according to Prof. Calkins, as to the organic nature of the spirochete found in the Buffalo laboratory. All who have seen it agree that it is a true organism; and if it is ultimately found in all cancers, the conclusion will be that this organism is the cause of the disease.—*Boston Medical and Surgical Journal*.

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#### THE USE AND ABUSE OF SODIUM BICARBONATE.

In the whole range of drugs in common use there is, perhaps, none the pharmacological value of which is considered less open to question than sodium bicarbonate. It has enjoyed a wide vogue for many generations in cases of gastric pain and hyperacidity of the stomach. It is important, therefore, to notice in the *Bulletin des Sciences Pharmacologiques*, 1906, No. 10, a monograph by Dr. Leon Meunier in which the value of this classic remedy in allaying gastric pain is discredited. Dr. Meunier states that the action of the drug is generally explained in the following way: Gastric pain is due to an excess of hydrochloric acid, which causes no inconvenience during digestion owing to its absorption by the food. But when the stomach is empty the acid begins to exercise an irritating action upon the sensitive nerves of the mucous membrane. The acid is neutralized and as a result the pain is removed by the administration of bicarbonate of sodium at an interval of two, three, or four hours after a meal. Having doubts as to the validity of this theory Dr. Meunier set himself to investigate both clinically and chemically the part played by the drug. He found that in nearly every one of sixteen cases the most severe pain was experienced when the hydrochloric acid in the stomach was at a minimum. As bicarbonate of sodium was uniformly successful in relieving the pain Dr. Meunier was led

to attribute its beneficial action not to a mere neutralizing effect, but to the production of carbon dioxide which exerts a calmative effect on gastric pain. The acceptance of this hypothesis suggests the unsuitability of administering sodium bicarbonate alone as a source of carbon dioxide, since its therapeutic action is proportional to the quantity of hydrochloric acid present in the stomach and is liable, therefore, to great variations. Moreover, the saturation of the hydrochloric acid by the sodium salt retards the progress of gastric digestion, as pepsin acts only in an acid solution, and it further retards intestinal digestion, as the acidity of the gastric juice has been shown by Pawlow to be the specific excitant of the pancreatic gland. This drug may thus reduce a patient to a state of alkaline cachexia which led Trousseau to utter the dictum: "The abuse of alkaline drugs has done more harm than the abuse of mercury." Dr. Meunier suggests that it is more rational to produce carbon dioxide in the stomach by means of tartaric acid and a mixture of carbonates, so chosen as to evolve the gas slowly and continuously without modifying the acidity of the gastric juice. The tartaric acid is prescribed in 1 gm. powders and the alkaline powders contain sodium bicarbonate 0.4 gm., calcium carbonate 0.3 gm. and hydrated magnesium carbonate 0.2 gm. The patient is directed to add an acid and an alkaline powder separately each to a half a glassful of water and when the pain commences, to take alternately tablespoonful doses of the acid and alkaline draughts. Dr. Meunier has found that gastric pain is most readily relieved by this treatment, whereas the administration of the alkaline draught alone is much less efficacious. From clinical experience he concludes that the carbon dioxide acts as a sedative by accelerating the evacuation of food from the stomach.—*London Lancet, Bost. Med. and Surg. Jour.*

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#### ERROR CORRECTED.

*To the Editor:—*

Please make the following corrections of the report of a paper on "A Case of So-Called Cyclic Vomiting with Hepatic Insufficiency" by Drs. Saunders and Johnson, which has just been received by me. This paper was read at the meeting of the Bethesda Pediatric Society on Dec. 21st, 1906:

(a) Error: Cyclic vomiting was suspected and the urinary test made the first time at Beers Hotel, but was negative.

(b) Omission: Hypodermoclysis was resorted to on that occasion with evident good results.

Dr. Saunders is anxious that his paper does not appear without these corrections, so that I trust that I have not received the corrections too late for publication. If such is however the case, you will please make a note of same in the following issue.

Yours truly,

A. S. BLEYER, M. D.

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#### ERROR IN DR. SHOEMAKER'S ARTICLE.

In the March number of the *COURIER OF MEDICINE*, Dr. W. A. Shoemaker contributed a very practical article on "The Treatment of Gonorrheal Ophthalmia Neonatorum." We desire to express our regret that an error is found in that article which might be misunderstood. On page 137, the third line from the bottom of the page should read "may be replaced by the nitrate in  $\frac{1}{4}$  to  $\frac{1}{2}$  per cent," instead of 12 per cent. as it now reads.

## ORIGINAL ARTICLES

### THE CARE OF THE NEWLY-BORN INFANT.\*

BY E. W. SAUNDERS, M. D., ST. LOUIS.

It is sad to read these lines in the great work of Pflaunder and Schlossmann, of recent date: "The diseases of the newly born, that is, of a child during the first two weeks of life, are in fact but little known;" and again, "almost fifty per cent. of the deaths occurring during the first four weeks fall in the first week, and half of this number occur during the first two days." The reasons for this state of things are many. In the first place, the lack of adaptation of the child to its new mode of life and its defenseless condition against most infections, even the most benign. Against a few diseases, such as the exanthemata, there may be an immunity conferred through the mother's blood. The care of the newly born falls under a few heads: first, the establishment of the function of respiration; second, the prevention of infection; third, alimentation; fourth, the maintenance of a proper equilibrium of heat production and dissipation; fifth, elimination.

In a society of this character, I may be excused for going back even further into the domain of the accoucher. Years ago, I protested against the use of the most popular forceps sold by the instrument-makers, the blades of which have an exceedingly sharp edge, are thin and springy, giving rise to slipping, and deficient in cephalic curve. Much unnecessary damage is done to the fetal head by such instruments. In the interests of the child, I would urge the importance of frequent auscultation of the fetal heart, and intervention in the interests of the child whenever danger threatens. As all writers, pediatric, obstetric and neurological, are agreed upon the importance of the prompt relief of asphyxia, and the prompt relief of dangerous compression to the head, it is not necessary to urge this point further. Sachs strongly inclines to the opinion that delay in the use of the forceps causes more birth palsies than the forceps themselves, and I thoroughly concur in this opinion. DeLee states that this is one of the most difficult practical points to decide. So soon as a child is born, no time should be lost in inducing respiration, and for this reason the obstetrician should never lack competent assistance at this critical

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\*Read before the St. Louis Obstetrical and Gynecological Society.



moment. The first thing to be done is to free the respiratory tract of fluids by an aseptically wrapped finger, or in extreme cases aspiration through a catheter, and then if skin irritation does not succeed immediately, commence artificial respiration. The child can be laid across the mother's abdomen or thighs, until the cord is cut. The method of Dew is excellent, but after the cord is cut, the regular Sylvester method, I think, is more efficient. Schultze's method I used for a short time, but discarded. Care should be taken to have the head low, in order to facilitate the expulsion of mucus from the wind-pipe and bronchial tubes. After respiration and the reflexes are established, and auscultation discovers numerous rales in the lungs, it is surprising how quickly the lungs can be cleared by inserting the aseptic finger into the pharynx, with the child inverted, and causing attempts at vomiting.

If there be no cerebral hemorrhage, or bony compression upon the brain, the danger may be considered practically over, so soon as respiration is well established. In pallid asphyxia, with a weak heart action, a hypodermic of a few drops of brandy and a minute dose of atropine, have been strongly recommended. If, however, the symptoms point to a cerebral hemorrhage, the prognosis must be withheld and the possibility of an operation for the evacuation of the clot, as done by Cushing, must be kept in mind. If there is a depression of bone, due either to the forceps or to a normal or abnormal bony prominence, this too is amenable to operation.

In the case of feeble infants, whose breathing again begins to deteriorate, flipping the soles of the feet with a rubber band will cause crying and deeper breathing. It is interesting to note how long the time is required for the sensation to travel from the feet to the sensorium. Wherever there has been respiratory trouble at birth, the case must be watched carefully for some time, as acquired atelectasis may supervene a day or two later. I strongly recommend the Kellogg ring in place of ligature of the cord. It is considered unsurgical to ligate any blood vessel surrounded by a mass of tissue, and it should be so considered here. I myself have had almost fatal hemorrhage from the ligature loosening, and I know of scarcely any obstetrician with whom I have much to do who has not had the same experience.

There are numerous aseptic methods of dressing the cord described in literature, and I would only protest against those which employ dangerous drugs or antiseptics. One drug house, for instance, put out a dusting-powder containing a large percentage of acetanilid, recommended for this purpose, and I remember reading of a fatal case of acetanilid poisoning from its use.

The baby should be handled throughout aseptically, laid across the mother's abdomen, and never allowed to touch the soiled, wet and cold bed. Only sterile oil and sterile water and clean hands should come in contact with any part of its body. Any abrasions from the forceps should be immediately dressed with boric acid vaseline. If there is much abrasion of the head, a gauze cap should be applied until the abrasions are healed. This reminds me of an experience. Bichloride gauze was manifestly used instead of aseptic gauze, giving rise to a severe purulent dermatitis of the whole scalp.

In private practice, where the obstetrician is sure that there is no specific infection, it is sufficient to wash the eyes with boric acid solution, but where there is the least suspicion, or any purulent discharge, and in all institutional cases, Crede's method should be used. In Bethesda, we have used the argyrol solution, instead of the nitrate of silver, with absolutely no bad results, such as have been reported from the use of the inorganic salt.

As soon as the mother can dispense with the aid of the physician, a careful and systematic examination of the infant should be made, with a view to excluding all malformations. Especially should the physician be on his guard against overlooking *morbus ceruleus*. I have seen several instances in which this was done to the great discredit of the physician. In this disease, the cry is never so vigorous as it should be, and instead of the color changing from purplish to pink, during the act of crying, the reverse is true. Around the mouth particularly, the engorged veins may be noticed. Auscultation often reveals no abnormal heart sound.

Some writers have decried the daily toilet of the mouth, but properly performed, it is certainly invaluable in the prevention of thrush. Often the child is treated to only one garment next its body for the first hour or two. It should be wiped dry so soon as born, rolled in a dry, practically sterile, napkin, and then put in a comfortable warm place. The face should never be covered, as is done by so many nurses. Where chloroform has been used in the presence of a flame in the room, the exceedingly irritating gas is dangerous to the baby, and the child should be removed into another room at once, until the air in the room can be changed. The prevalent abomination of a gas-log, throwing its fumes into the room, should be done away with by law. Twenty-four hours after birth, a lusty child was nearly asphyxiated by such a device. Apnoea set in suddenly, and I and my assistant had to use artificial respiration and flagellation for nearly twenty-four hours, at intervals, before the child was out of danger.

Where practicable, measures should be taken before the birth of the child to avoid any possible occurrence of specific infection, such as tuberculosis, whooping-cough, the exanthemata, grip, etc. After the advent, no visitors should be allowed without a clean bill of health.

The hemorrhagic diseases of the newly born have attracted much attention of late years. While heredity may be responsible for a very few cases, especially luetic infection transmitted, it seems reasonable to relegate the great bulk of the cases to acute bacterial or pyogenic invasion. Hemolysis is not uncommon in children of all ages, suffering from the severe specific disease, and this is still more true of the newly born. But in them, the ordinary pyogenic or colon-bacillus infections seem peculiarly productive of this condition. The colon-bacillus, staphylococcus, streptococcus, pyocyanus, pneumococcus, Gartner's bacillus, and perhaps many other organisms, are prolific sources of hemolysis.

The prevention of infection, then, is the solution of the prophylaxis against this dangerous condition. I have seen two cases of melaena which I thought might be due to the administration of ordinary household milk unsterilized. In the treatment of hemorrhage, we should never despair. Adrenalin and chloride of calcium are as near specific remedies as can be found in any condition of disease. I think it has been thoroughly demonstrated that the chloride of calcium is the efficient element in gelatine, which is to be dreaded on account of its genesis in the glue-factory from the hoofs of the horses dying from tetanus. So many cases of death from tetanus after its use have been reported that I think it should be discarded, as heat seems to be unable to destroy the contained spores.

The proper maintenance of the body-heat is an important chapter in our discussion. Great errors are committed in both directions, that of exposing the child to chilling from insufficient clothing, and on the other hand, of super-heating it. I have seen the temperature of a premature infant go up to 106, within a short time after being placed too near a radiator. In all cases of premature and feeble children, a reliable atmospheric thermometer should be placed in immediate proximity to the infant. In poor practice, where the room is cold, it is well to keep the child across the mother's abdomen, and well covered up, with access of air, until a proper place can be prepared for its reception. Many cases of troublesome nasal catarrh and worse evils are due to a neglect of the body-heat of the child immediately after birth. In bathing, the nurse is apt to expose the child too much, especially where there is no radiant heat. A register

acts like a fan upon the body of the wet child. In hot weather, great sins are committed against the child, and the mother, too, for that matter, from ignorance as to the requirements of both. A thermometer should always hang over the bed in summer, when it is very much more necessary than in winter. The nurse should be instructed that a temperature of  $80^{\circ}$  means not only discomfort but the beginning of danger. Top ventilation and electric fans should be invoked. The modern flat, with its ban upon the family of more than one child, its horizontal ventilation only, its gas-log, and its radiators providing no access of fresh air, is a potent factor in the production of modern race-suicide. Elimination should never be forgotten by the physician in his care of the newly born. The meconium is usually promptly gotten rid of without any assistance, but if not, the traditional castor-oil should be administered. Transpiration through the skin is of course vital, but visible perspiration is an evidence that the child is kept too warm. Restlessness, thirst, painful sudamina, giving rise to staphylococcus infection, are the evil results of this negligence. The urine deserves the closest attention. A shower of uric acid and urates is very common, immediately after birth. This may be attended by severe pain and fever. If the crying is continuous, the condition may become serious, owing to the presence of small calculi, in the calices, or lower down, or else to the occlusion of the urethra by urates. No time should be lost in using the catheter, if the urine is not voided and the child is in pain. So severe is the suffering that convulsions not infrequently occur. The lumen of the catheter suitable for these cases is so small as to require aspiration with a hypodermic needle, applied to its distal end. However, in most cases, the simple introduction of a bougie is sufficient to inaugurate the flow. If the concretions are in the kidney, the case is practically hopeless. The baby may linger in suffering for months, and finally die.

Holt's inanition fever, while deserving the place in systematic literature which it has attained, should be distinguished from fever due to uric-acid retention, and from thermic fever, in summer, and in winter also, where the child has been exposed to too great artificial heat.

Before making the diagnosis of hemorrhagic disease, in any case, we must consider the following possibilities: pressure during parturition may cause a slight extravasation of blood from the rectum, apparent perhaps after twenty-four hours. The child may swallow blood while in the parturient canal, or may imbibe it from a fissured nipple. Some have even claimed a congestion of the pelvic veins from late ligation of the cord. The possibility of gastric or duodenal ul-



ceration must be kept in mind. In giving hypodermoclysis for hemorrhage, we must remember that sudden stoppage of the heart may occur. Therefore, no massage should be used. It has been suggested, in this connection, that manipulation of the cord before the establishment of respiration may react upon the heart.

In this connection it may be well to remind you not to be alarmed by vaginal hemorrhage in the newly-born. Sometimes it is puzzling to find blood on the napkin, but by separating the labia some blood stains or blood clots will be found between them indicating that the blood has its origin from the genital canal. This disappears in a few days and never causes any harmful effects.

As to clothing of the infant, many errors are daily committed. Heavy flannels to an irritated skin in an overheated atmosphere must be the cause of acute torture. In rooms that are not well heated, and for babies whose body-heat is not up to par, they are no doubt very useful. Again, savage cruelty is perpetrated on the helpless infant in applying bands that are so tight as to interfere with respiration and normal expansion of the abdomen and peristalsis, and in the application of diapers drawn so tight against the perineum as to cause excoriation, and, according to Cotton, even deformities of the pelvis. This diaper question is a very serious one. No doubt infections after circumcision, for instance, are due to it. After circumcision, or in fact in case of any irritation about the vulva or the genitals, the diaper should not be pinned up at all. In fact, there is no reason why it should be, if children are lying horizontally. Many cases of eczema and painful excoriation can be cured only after this pernicious custom has been abandoned. There is no doubt also that it is a frequent cause of onanism in babies of both sexes. I have been called more than once to older babies who were screaming incessantly from no apparent cause, and found a tight diaper in contact with a minute excoriation of the glans. In this connection, it is well to know that babies of three months can be trained never to soil the diaper during the waking hours.

In the care of the newly born, the symptoms of severe pain and convulsions should be considered especially, and the event of sudden death. In a case of screaming pain, we think of colic first of all, next lithiasis, middle-ear inflammation, strangulated hernia, or other abdominal lesions, and of course external injuries, or painful skin affections. Rotch some years ago called attention to the fact that in a large percentage of the newly born dead, the middle-ear was found full of mucus.



It is well to remember that in infancy the middle-ear and the pelvis of the kidney are the most defenseless portions of the body against infection, and in every case of fever, with or without pain, not explicable on other grounds, the ear should be examined, and the urine examined microscopically. In case of agonizing continuous pain, it is sometimes necessary that the baby inhale a few drops of chloroform, in order to make a thorough examination of the abdominal cavity. Many cases of strangulated hernia are overlooked until it is too late for operation. The chloroform may avert convulsions, which otherwise are so prone to occur at this age, from unbearable pain, even in the absence of pyrexia or toxemia. If there is the slightest appearance of tumefaction in the inguinal canal, and the intestinal canal is not manifestly permeable, it is safer to call a surgeon. In convulsions, nothing is more dangerous than the traditional hot-bath, which increases the irritability of the spinal centers, and sends the temperature up, not to speak of the dangers from the enforced recumbent position and the frequent scaldings administered by the excited family. A little anesthesia is the sovereign remedy, putting a stop to the convulsions until time is gained for a thorough investigation as to the cause of the eclampsia.

It is within the period allotted to us that the symptoms of pyloric stenosis occur. There can be no doubt now that rarely this condition is congenital, but more frequently acquired. The stomach being a rudimentary organ at this age, undergoing rapid development in size, motor-power and secretory activity, it is natural that the pylorus should go astray sometimes in attaining to its peculiar function. Its duty is to close the lower end of the stomach against the untimely expulsion of its contents, and, as in the case of adults, it may become hyper-sensitive and prove a persistent barrier. Whenever a baby, within the first month, begins cumulative projectile vomiting, then be on the watch for this condition.

The subject of alimentation is a vast one, and we must abstain here from going into the rationale of the science. Many things have been written and said about putting the child to the breast regularly from the time of birth. The fact seems to be that there is not enough colostrum in the breasts nor yet awake to their function to satisfy the child hunger, with rare exceptions. If the child be put to the breast regularly in the case of a multipara, it means not only unnecessary disturbance at a time when rest is most desirable, but the awakening of agonizing after-pains; and the fruitless suckling is racking to the mother, and discouraging to the child who is learning the one necessary art for him. I think it is not well to lay down any iron-clad

rules as to putting the child to the breast for the first two days. However, this does not mean that no nourishment should be administered. Normal sugar-water, with a grain of phosphate of soda to the ounce, can be given at first. Later, if the child is honestly hungry, a sugar-water with a little sterile cream, or condensed milk 1 to 16, should be given. The hungry child will be nauseated if given water instead of food. On the third day, the milk usually appears, and from that time on the baby should nurse regularly during the day, and during the night, if possible, for the first part of the puerperium fed from the bottle with milk drawn from the breast under sterile conditions. This is not usually necessary, but may be very conducive to the recovery of a mother who has had a particularly hard time in labor.

To the honor of Missouri women, I would say that not once in years do I have to insist upon a mother performing her duty to her child. Such is not the case in the Eastern cities. On the other hand, it is a deplorable fact that a large percentage of these willing mothers are not able to nurse their children, either because of failure of the secretion, painful nipples, inverted nipples, or indigestible and even toxic milk, as shown by the behaviour of the child.

I have read with wonder the various articles describing the methods of preserving the nipples intact, and of producing the normal flow of milk. For myself, I am very much discouraged along this line. Not infrequently it happens that a mother, and even a nurse, labors under the delusion that the child is deriving abundant nourishment from the breast, when it is actually starving. A leaky breast to their eyes is proof of an abundance of milk. The physician should always be on his guard against the occurrence of this calamity. If the child be originally vigorous, he will not cease to protest until he becomes too enfeebled to do so, but in the case of premature, weakly and long starved children, a condition of apathy supervenes. A peculiar hoarse cry in a previously strong child should at once arrest the attention. The amount of urine secreted will determine the quantity of milk ingested. If this amount be normal, and the stools also normal in size and frequency, in the absence of the administration of water, we may conclude that the child is getting enough in quantity, at least. If, on the other hand, the child is sleepless, in pain, has abnormal stools, the quality of the milk is at fault. In case of the slightest doubt, it is well to use condensed milk, or some proper modification of a reliable milk, sterilized, for a day or two, pumping the breasts regularly in the meanwhile.

It should not be forgotten that the gastro-intestinal canal of the infant until the end of the first quarter, is permeable to bacteria, and

even to alien albumins, and that it is exceedingly dangerous to permit of the entrance of non-sterile food into the canal. Early in the nineties, I began to protest in my lectures and in writings against the sterilization of milk as being productive of rickets and various dystrophies, but since then it has been found practicable to employ relative sterilization, as excluding the pathogenic bacteria, and certainly for the first three months of life, it is safer to accept that horn of the dilemma.

If the newly-born infant gets a gastro-intestinal infection, the outlook is deplorable, for there is no substitute for milk at this age. Egg albumen is not assimilated, neither are the starches to any extent, and we are compelled to keep the child alive by some form of milk administration, even though it feed the pathogenic bacteria, which have obtained lodgement in the canal. The substitution of a wet-nurse often fails to save them.

There are idiosyncrasies against alien albumens which are very pronounced. Not only is egg albumen not assimilable but it sometimes is highly toxic, producing an erythema even of the lips, wherever it touches. Very rarely the same is true of cow's milk, and of course the only hope in such a case is in human milk.

In every case under the physician's care, the nurse should be instructed to keep a record for the baby as well as for the mother; the feedings, the temperature, the action of eliminative organs, the amount of sleep, the occurrence of pain and the weight should all be recorded. The dictum that there should be a loss of weight for the first week or ten days should not be received as absolute. In the case of very large children, who sleep most of the time and seem not to be born hungry, this rule may obtain; but it would be fatal to allow it in the case of premature, weakly, ill-nourished babies. With them, there should be forced feeding.

For purposes of the weight-chart, the initial weight should be taken as beginning after the discharge of the meconium is completed.

As to the amount allowed at each feeding, we note such astonishing variations in babies of different maturities, size and vigor, that we should be careful not to draw the line too tightly. The child who is never satisfied, and can not rest on one ounce, will be perfectly content when its rations are increased to an ounce and a half. While we must insist upon keeping within the physiological limits, we can and must satisfy each hungry child. I have never been in favor of a great dilution of the proteids. It is time enough to retreat when we find that the child is not able to digest them.

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## AN AZTEC REPRESENTATION OF LEPROSY.

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Not long ago I had the opportunity of seeing and of examining pretty closely a statuette of reputed Aztec origin and it presented several points of more than ordinary interest to the dermatologist and I deemed that it would not be uninteresting to give a picture and a description of it to the medical profession. The statuette represents some interesting features both from an archeological and a medical point of view.

The figure came from Ameca, in the State of Jalisco, Mexico, through which runs the chain of Sierra Madre Mountains. It was found in the possession of an old woman who claimed to have had it forty-five years. Its anterior history she was unable to give. It is now the property of the writer, who has had it photographed. Not knowing the name of its Mexican owner I could not trace its changes of owners or how it was found. Of course, this is to be regretted but really does not affect its value as a specimen.

Before proceeding to an analysis of the condition which it represents it may not be out of order to describe it from a purely archeological point of view. As may be seen by referring to the print which is given it represents a human figure in a sitting posture, the legs being well flexed. The feet rest on the ground and the knees are well shown. The arms are in flexion the forearms being in pronation, the wrists resting on the thighs near the knees and with the fingers and thumbs extended. The eyes are staring, the lips separated showing the upper teeth. The head is peculiar in that it shows a long straight nose, and a rounded, bulging forehead. In fact, the type is not a pure Aztec one. The head is covered with a peculiar cap so that no hair is shown. The measurements of the statuette are as follows:

From level of buttocks to top of head 15 inches; width of shoulders, 6 inches; width at wrist  $6\frac{1}{2}$  inches; length of arm  $4\frac{1}{4}$  inches; length of forearm,  $3\frac{1}{4}$  inches; length of thigh 5 inches; length of leg  $4\frac{1}{4}$  inches; distance between thighs on abdomen,  $1\frac{1}{2}$  inches; length of right hand,  $1\frac{5}{8}$  inches; length of middle finger,  $\frac{1}{2}$  inch; length of left foot,  $1\frac{3}{4}$  inches; height of umbilicus,  $\frac{3}{8}$  inch; nose from tip to root,  $1\frac{3}{4}$  inches; nose from tip to face,  $\frac{5}{8}$  inch; eye, width,  $\frac{1}{2}$  inch; eye, length,  $\frac{7}{8}$  inch; forehead, height  $\frac{1}{2}$  inch; mouth, width, 2 inches; ear, length, 2 inches; ear, distance of top from head, 7-16 inch; ear, distance of bottom from head,  $\frac{5}{8}$  inch; teeth (upper only shown,) length, 3-16 inch.

A general examination shows a fair modelling, and the figure is well finished. The back of the head and of the body is flattened which would lead to the conclusion that it was made to place against a wall, possibly of some temple as it would not be strange for this ancient people to have *ex-votos* like the Romans had exposed in the temples of Tesculapius, Venus, and others of the their gods.

One of the first questions to determine in connection with this piece of primitive statuary is its age as this carries with it another



important question to which allusion will be made later on when the medical aspect is taken into consideration. As we all know the Aztec forehead formed a continuous line with the nose and it was markedly retreating. It has been so observed and described by reliable observers. Now, the statuette before us has a rounded or convex forehead which is straight and not retreating. In fact, it would lead us to believe that a Spaniard's head was used for a model. At the time of the invasion of Mexico by Cortés, the invaders were cordially hated by the natives



and they would be very apt to give a Spanish characteristic to the head of a victim of the filthy disease here represented to show in what contempt they held the Spaniards.

Of course, this is all merely speculative and not as exact as the determination of the disease which is represented by the figure before us. The figure is evidently that of a woman which may be determined by several peculiarities which are presented. There are no genitalia



shown. There are more or less atrophied mammae and the umbilicus stands out above the level of the abdomen, a feature which was an attribute of woman in Aztec female statues. Another proof that it is a woman which is represented is furnished by the peculiar head-dress which is worn. In connection with this it may be mentioned that there is no indication of hair either on the head or pudenda. The posture is an excellent one for the purpose which was intended which no doubt was to show in a plain manner the disease from which the

subject was suffering and the mental agony inflicted by her condition.

The complex of symptoms point to but one possible disease and this is easily determined by a consideration of the conditions represented. A condition which strikes the observer as especially marked is the mutilation of the fingers. All the fingers and thumbs have the distal phalanx missing. On the left hand the thumb and two fingers have been accidentally broken. Of the right foot nothing can be positively said. The entire front part has been broken off, but the left foot has no toes and this condition of mutilation is well represented. It is a form which is seen to-day especially in India. As has been stated above the mammae are atrophied. The ears are very characteristic being enlarged, with no symmetry of form and projecting from the side of the head at a right angle. The absence of all indications of hair is a farther corroborative sign. The drawn mouth, staring eyes and strained position are indicative of pain. Taking all these signs in common one is irresistibly drawn to the conclusion of pronouncing this a representation of mutilating leprosy, anesthetic in type. The pain which is expressed is rather mental than physical and more indicative of the hopelessness of the subject than of actual physical suffering. This is easily understood when we take into consideration that she was taken as a model of what was considered a hideous chastisement of the gods. No one would have suffered or submitted to a representation such as this except in the hope of appeasing the wrath of his deities by placing a representation of the trouble in a temple and offering up prayers for rapid and complete relief.

The Aztec statuette suggests some interesting questions among which is that of the age of leprosy on the Western Continent. So far as Europe is concerned it is of the highest antiquity and if reliance is to be placed upon the records of the peoples of the great plateau of India whence the several great waves of immigration started in a Westerly direction leprosy was almost coeval with the human race. Be this as it may we must admit that the beginning of lepra is enveloped in the impenetrable and archaic mists of the most ancient times, and epochs. And wherever the disease is found in an endemic form, inquiries do not cast any light upon the situation. All that it is possible to elicit from the most learned as well as from the ignorant is that it has existed beyond the memory of man and whatever legends of an explanatory nature are volunteered also have their origin enveloped in the same Nubian darkness. An historical wall is erected before our eyes and we cannot go beyond it or on the other side of it by any known means and investigation is abruptly

stopped. This is certainly a disappointment to the historical investigator. Still we entertain hopes that some day a student of Aztec inscriptions may discover and interpret some which will throw some light on the subject so far as Aztec leprosy is concerned.\* We have had the papyrus Ebers given to us and its interpretation afforded so that we need not yet despair so far as the solution of the question involved in Aztec leprosy is concerned, especially as there are at present many intelligent and industrious workers in this field of archeology and discovery engaged in researches.

Another interesting point to be noted in connection with the specimen which has been shown is one that will strike every one who has read its description. The internal evidence offered by the statue, its characteristics, and other points offered by it all certainly point to its antiquity. How old it is is an open question and one which would more properly appertain to trained archeologists. One admission must be made and that is that the specimen is a very ancient one. This much at least must be conceded. A close examination of the symptoms of the disease which are presented shows them to be clear and easily recognized by any one at all familiar with the appearance of *lepra mutilans*. In fact, it might be taken as the reproduction of a case as seen to-day. It is true that, from an artistic point, the work is rather crude and yet it compares very favorably with similar work by other primitive peoples. The salient points are well brought out and there seems to exist no tendency to exaggerate. The appearances presented are certainly true to nature and there seems to exist evidence of the care that was taken to make it truthful in every detail. The teeth are very carefully made showing that the subject was young as they are regular and present the appearance of being sound. The limbs are well rounded and this would also argue in favor of a young woman. Taken in conjunction with the mutilations shown it would tend to argue that the leprous process was severe in its nature and rapid in its evolution. The writer has seen as extensive mutilations establish themselves two years after the disease was first recognized the only symptoms then existing being a brown macule in the back and thickened ulnar nerves with fusiform swellings. The fact remains, however, that this antique representation of leprosy is essentially the same as one of a case of to-day would be. This goes to show that the disease is the same in its manifestations and this is a further proof that a cure for leprosy was unknown in antiquity and we are as far removed from its discovery as they were in the most ancient times of which we have any records or vestiges.

There are other interesting questions suggested by the remains

of Aztec art before us and each one is deserving of a full discussion. but, perhaps, sufficient has been said for the present and it would become divested of much interest were it led into the mazes of archeology and the finer phases of archaic ethnology as well as into the sociologic questions of the Aztec race including its religious beliefs, observances, rites and ceremonies. These certainly do not appertain to a medical paper interesting as there are *per se*.

This contribution has been written in the hope that it may bring to light other similar specimens of by-gone ages which are of interest from a medical point of view and may help in some small degree the student of medicine among Ancient peoples. It is such matters which tend to stimulate earnest students of the history of medicine to greater efforts and to render others broader in their views of the by-gone events and deeds and afford them guides for their own use in the way of accomplishing those things which are worth doing.

*Addendum.* In contrast with the statuette which has been figured above is given the picture of an Aztec goddess. It will be seen here that the physical build above the waist is that of a healthy woman so far as the torso and head are concerned. The Aztec features are both marked and pronounced and the type is a clear one of the race. The facial angle is that which has always been described by ethnologists, the nose being particularly prominent and well marked. The mammae are well developed and symmetrical, the mamillae being particularly large. What will particularly strike the observer is the fact that the arms and legs are very short. Moreover the hands and feet have only the digits indicated and not made separate. There exist no sexual indications as was wont with the Aztecs when they represented females. Representing the lingam was not considered proper and they refrained from doing so. From the evidence furnished by this figure and the fact that it was found in a very ancient burial ground of the Aztecs it certainly antedated the first Spanish invasion by many years. It represents an Aztec goddess as may be determined by the crown on her head and the large ear-rings which are represented. There are other attributes presented which would lead to the same conclusion. Our knowledge of the manners and customs of the Aztecs is so limited that very little may be said in this respect. The figure, whose picture is given, is quite flat and is one of the sort which were placed at the head and feet of a dead Aztec of any position. As a subject for archeological investigation this one offers much material for research and thought.

Considered from a medical point of view this figure offers no indications of any disease. The short arms and legs probably so made to

prevent any danger of their being broken or at least render this less liable to occur than if they had been made according to proper proportions. This would be necessary in view of the fact that these representations of their deities were buried with the dead bodies. The exact determination of this question will not be considered here. Nor will the fact that in this statuette the mouth is represented closed with thin lips, a sign of discretion. What is to be particularly remarked is the prominent nose and the acute facial angle, the receding forehead and the narrow face so characteristic of the Aztec type. The hair is not shown being concealed by the crown and from an examination of other figures of females it would appear to have been a custom with them to conceal their hair except in the lower and more savage strata.

Measurements will not be given beyond a few to give an idea of the size of this figure. They are as follows:

Total length, 12 inches; length of arm, 3 inches; length of leg,  $2\frac{1}{2}$  inches; length of foot, 3 inches; length of body, 5 inches; Breadth of body, 4 inches; length of face,  $3\frac{1}{4}$  inches; length of nose,  $1\frac{1}{2}$  inches; length of nose from tip to face, 1 inch; length of hand,  $\frac{3}{4}$  inches.

One peculiar feature to which attention must be called is the peculiarity in the wearing of the ear-ring. It would seem to have been worn like the discs of wood which Kaffir women have in the lobes of their ears. The rings do not hang from the lobes but are introduced in them and much care has been taken to represent the ring as such and not as a disk placed against the lobe, a fact which might lead to the question of the possible relationship existing between the primitive ancestors of the Kaffirs and of the Aztecs. This, however, is too deep a question in ethnology to enter into its consideration at this time. All the questions involved in these two small Aztec statues are of the highest interest and deserving of full consideration.



## THE TRANSMISSION OF MALARIA.

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A great deal is now scientifically known about malaria. Most details concerned in its transmission have been brought to light. We see now where are the points of attack; on these the preventive measures have been built. Unfortunately, their enforcement is antagonized by the most discouraging facts; such vast tracts of country are ridden with the specific carriers, such vast numbers of people with the parasites, that it seems in a word, that nothing short of actual occupation of territory can ever annihilate the disease. This, naturally impossible, the only alternative left is restriction, isolation of infected areas from the remainder of the world. It may be asked with reasonable doubt—and in how far is this possible? Where actual occupation obtains, the disease, at least among the civilized and controllable races can be exterminated.

The distribution of malaria is broader than that of any other infectious disease, practically every part of the habitable world has been visited at some time; epidemics, pandemics even, have been frequent. The disease, furthermore, shows the peculiar and usual characteristic of infectious diseases, of disappearing from certain countries and again reappearing without explainable reason. It is easy to site examples of this peculiar faculty, they are very common, thus Holland at one time became quite free from the disease but is now again the seat of many cases. Great Britain for some unaccountable cause is now entirely free from malaria, and anopheles although quite common do not bite there at present. There is no malaria in the north of Germany, although the carriers of the diseases are still plentiful. In France like-wise, where the diseases seems largely to have disappeared, the same conditions of wetness, soil and mosquitoes continue to obtain as when the disease existed in epidemic form. It can hardly be said that no one exists in these countries who carries the sexual forms of plasmodia in his blood, for the commercial and social relations of these countries with those in which the disease is constantly raging and in which the majority of people are infected, are very close, migrations back and forth are in fact, continuous.

Naturally, on the high plateaux of Armenia, the Transcaucasia,

in Nova Scotia and Greenland, and at great altitudes, the disease is never found.

In our country, malaria is most prevalent in the Southern States, although certain regions as the hilly and sandy parts of Mississippi are exempt. It is present, although to a less extent in the Middle States, and diminishes as we travel north and west. In certain parts of the West however, e. g., Utah, Wyoming, Colorado at the lesser altitudes, the disease is very often met with. In the West it does not occur at elevations of more than 6,500 feet. It is surprising that the southern parts of California which are subtropical, are wholly exempt from the disease. In the New England States, in New York and Pennsylvania, malaria has almost disappeared.

Of course, the greatest scourges of the disease occur in South Africa, in Italy and in certain provinces of Asia. There is very little malaria in Japan and the disease is said to have but recently been introduced into New Caledonia.

It will readily be understood that quarantine against such a distribution as this is not especially reasonable, more particularly in the case of a disease so insidious as malaria. Certain precautions however can be taken, as will later on be pointed out.

In studying the transmission of malaria, the first vital question involved is of course, is man the only carrier of Laverans' plasmodium? do we not also find it in other animals from whose blood anopheles could acquire it? Do we not already know that the red cells of many animals, birds, reptiles even, carry parasites that produce, periodic fevers? Koch was the one above all others who decided this point. From very extensive researches he was able to declare that multiplication of Laverans' plasmodium could occur in no other medium than the living blood of man. Inoculations even into the anthropomorphic ape failed to show any increase, since the parasite could not under any conditions persist there for more than a few days.

It having been proven then, that no animal but man could be the source for the infection of mosquito, and it having been proven that coalescence of the sexual forms of plasmodia could occur nowhere but in the stomach of anopheles and secondly that the drinking of water infected even by the dead bodies of infected anopheles, or the eating of food that had been exposed to infection in every possible way, could not convey the disease either to man or to mosquito, the problem of prophylaxis narrowed itself down to these conclusions: A. Destruction of plasmodia in man. B. Destruction of anopheles. (It was Grassi and the late lamented Schaudinn who showed that the sporo-

zoites outside the mosquito are very perishable indeed and can practically not be used for experimental purposes.)

Koch very forcibly favors the former method, that is, the destruction of the plasmodia in every man; he does not believe that the destruction of anopheles is possible. (Celli and Plehn on the contrary, state with convincing logic that such a plan as Koch's must be yet more hopeless, since it would require almost an army of physicians to cope with the hordes of infected individuals in certain countries, e. g., South Africa, and an army of soldiers to help them. Again, many noted investigators are averse to agreeing that cinchonization can in every case completely rid the blood of infected man of the plasmodia. Upon this method however, Koch's plans are based, and be it understood, that he has obtained results that are most gratifying in New Guinea where he has personally put it into trial. It is undoubted, furthermore, that Koch's belief in a sort of endemic immunity (to certain species of plasmodia at least) gave him the conclusive premise for the assumption of the efficacy of cinchonization. To this view as well, there are still many and worthy antagonistic opinions.

There is some difference of opinion also, as to the proper method of procedure in attempting the anti-plasmodial cinchonization of man. They are based simply on the question of tolerance of the drug. After thorough cinchonization Koch advises to give 15 grains on the 10th and 11th day, as long as may be necessary. Ziemann recommends  $7\frac{1}{2}$  grains every fourth day. Other authorities suggest variously from 2 or 3 or 4 grains daily to double or even treble that amount on every second, third, fourth or fifth day. Celli has found that the ethyl carbonate (euquinine) is tolerated far better than any other salt and is just as effective, and may be continued for months without markedly unpleasant effects. It should be conceded I believe, that, since it takes at least two days for the complete elimination of even a very small dose of quinine, that daily dosage is certainly not advisable for protracted use, even of the ethyl carbonate.

The closest supervision of all such patients needs of course obtain, care being taken especially against their reinfection, as well as against their infection of anopheles. As for the second desideratum, namely:

The destruction of anopheles, which means chiefly the destruction of their breeding places, certain facts seem to simplify the matter. Firstly, it is true that the breeding place of anopheles must be water. Secondly various conditions must be present; the water must not be very foul, neither must it be perfectly free from organic materials, it must not be more than one meter in depth, since the larvae are not

supposed to have sufficient powers to rise from greater depths, this apparently depending upon active movements of the body (after having sought the bottom in order to shed their skins, which occurs not less than three or four times during the larval stage.) Again, the water can not be salt-water, nor can it be subjected to but very little motion, waves will cast the larvæ ashore, current will kill them. The water must not be exceedingly cold, since the larvæ, unlike the egg or adult forms are not resistant to cold.

In the next place, anopheles, unlike the stegomyia, are not seekers of habitations, they seemingly prefer to breed in larger and more open places. There are of course innumerable exceptions to this, which is in fact not a law at all. Their breeding-places, as Koch pointed out can be in discarded tin-cans, in all kinds of very small receptacles abounding in the vicinity of dwellings. They do not however exhibit the selective faculty for such places as do certain of the culcides, notably, stegomyia.

Occupation itself therefore opposes in some measure, malaria, not only in itself, but more so because it places under the hand the weapon of defense. Again, if we remember that anopheles are not strong fliers, and that without the aid of currents of wind that they are incapable of migrating farther than a few hundred yards from their native breeding-places, we will see that limited localities can be made more or less safe by hygienic procedures alone.

Drainage then becomes of paramount importance, and in itself is perfectly capable of greatly diminishing the incidence of the disease. To this alone, Grawitz attributes the disappearance of malaria in the north of Germany. This idea, however, is undoubtedly incorrect, or at least premature, since anopheles abound in vicinities of north Germany where, however, the disease does not occur, more weight must be given to other factors in the case.

A beautiful example of the beneficent results of occupation and drainage however, can be found in history: During the periods immediately preceding the 4th century B. C. or more accurately, up to 358 B. C., the vast area of land known as the Pontine Marshes, which lie a few miles Southeast of Rome, was inhabited by the Volscians and was occupied by over thirty thriving cities and fruitful fields, and was provided, history tells us, with an admirable system of drainage. No pestilence seems to have existed there at all, until after the entrance of the Romans, with subsequent desecration of property, the abandonment of drainage and even soil-tilling.

Malaria immediately infested the region, scourge after scourge of the disease swept over Rome from it and, although eighteen Popes and a half dozen Emperors, including Caesar Augustus, Theodoric the Great, Nerva, Trajan and others tried to reclaim it, it has never been successfully done. Pope Pius the sixth, succeeded by the construction of the historic Via Appia, at an expense of seven million lire to restore a small section of it, although today it remains one of the worst spots for the prevalence of malaria in the world. Recently, the Italian government has attempted to reclaim this region by the planting of eucalyptus trees, but no data of a convincing nature has appeared concerning the results of the venture.

The above historic example seems well to portray the fact that drainage and occupation alone may perhaps be able to do very great things in malaria. As for the danger of such water as is left and must remain, much safety can be derived from the suffocating method of treating any larvæ that may have been deposited in it. The method is entirely satisfactory and is readily executed by ordinary crude oil, using about half litre to each square meter of surface water. Other oils with possibly the addition of such substances as turpentine or creosote have been used with splendid success. It must be remembered in attempting to suffocate the air-breathing larvæ of anopheles that this stage lasts from ten days to two weeks, and that the larvæ do not issue from the eggs which have been deposited upon the surface of the water, for two or three days, making a period of somewhat over fourteen days, which means that the oil must be applied at not less frequent intervals than this.

As a single female anopheles has usually four ovipositions between May and October and deposits about 150 eggs at each oviposition, it will readily be seen what a single one of these insects is capable of accomplishing in the spread of malaria.

An interesting problem in the transmission of malaria is that suggested by the capacity of certain mosquitoes for hibernating. Most people are some-how under the impression that with the first frost, mosquitoes die, that the least approach of cold weather in fact kills them off. It is instructive to note therefor that anopheles are particularly resistant to cold. They can live through rigorous winters even without shelter, even when a blanket of snow covers the ground for many weeks, anopheles furthermore are found in the arctic regions. Certain writers, Schöo in particular, believe that it is the hibernating mosquito which is the cause for the early Spring cases of malaria. Most probably however, this is not the case, for various and good rea-



sons into which it is not necessary to go in this paper. The eggs of anopheles are far more resistant to cold than the adult forms.

A most peculiar fact is the strong attraction and repulsion that certain colors exert upon anopheles. Nuttall found for example, that the darker shades, especially navy blue, then dark red, brown, etc., are very attractive indeed and will in fact excite great activity among them. It was noticed by him that when a person clad in clothes of these shades, entered a room infested by anopheles, that they would fly up in great numbers and light upon the person, while the entrance of one clad in very light shades never created such a demonstration. Jolly corroborated these findings by observing upon which shades of sand anopheles seemed to prefer to settle (in Madagascar).

The deduction from these observations is of course very plain; in an infested district houses will be painted white or some very light shade, while the rooms especially will be entirely in white or the paler tints, again, the clothes that one should wear in such surroundings will be selected correspondingly. Jolly furthermore suggests that a reasonable way in which to catch anopheles that have already invaded a house would be to construct a large box, painted white outside and dark blue inside. This might serve as a practical aid to other methods.

The effect of odors upon anopheles has been very thoroughly investigated by Fermi and Lambau. Their observations were made with some 400 different substances, and they have concluded that but very few of them exert any marked influence, the ones which they found to possess most virtue are, oil of eucalyptus, cajeput oil, oil of bitter almonds, oil of lemon and allyl sulphide (oil of garlic), the effect after application on the skin passes off, after a few hours, whether indoors or out in the open.

There was an old belief that the eating of lemons in some way prevented malaria, and it may be pointed out that this may have been due to the excretion of small amounts of this oil by the skin, in the same way that the eating of garlic will cause the emanation of allyl sulphide from the skin and so repel anopheles. Di Mattei rather supported these views by certain observations made by him upon the laborers employed in railroad construction work in Sicily.

The value of odors in fumigation has been variously estimated. Probably, chlorine stands first, although for practical purposes sulphur undoubtedly remains our very best insecticide. In using sulphur for fumigation against anopheles it should not be forgotten that  $\text{SO}_2$  is heavier than air and will permit the mosquitoes rising above it to the upper strata where they remain and have been found living

afterwards. Sulphur, if used for disinfecting purposes should therefore be wafted about the room, or else be produced from several high points, about the room.

Chrysanthemum powder has been vigorously advocated by certain investigators, but is probably not as good as sulphur. The Italians put this substance up in combination with valerian and dispense it as "zanzolina" mixture, in pastilles.

The odor of the negro seems to be especially attractive to anopheles.

Another and very important point to bear in mind in preventing infection by anopheles is that this insect's bite in the great majority of cases is crepuscular, she as a rule neither bites in strong sun-light, nor in complete darkness. The hours from 4:00 p. m. until darkness are most favorable, and secondly, the short time that precedes sun-rise. These times must not be too strongly marked for they do not govern absolutely, since, especially after impregnation, the female will bite at almost any time, she has even shown a most ferocious disposition to bite at this time, which has been thought to be due to the need of richer nutriment than her customary carbohydrate diet, for the development of her ova.

Sambon and Lowe were highly successful in safe-guarding the members of the Liverpool Expedition to Italy by recommending that they remain indoors from 4:00 p. m., until well after sun-rise.

It is almost unnecessary to mention that of course, the female is the only carrier of the malarial plasmodium, and is alone concerned in its transmission, the habits, however, of both male and female are very similar with a few exceptions that need not be insisted upon, since those of the male have no interest to us in this connection.

Lastly, it is necessary to say something about the matter of screening in the prophylaxis of malaria, indeed one of the most valuable aids that we possess in combating it. I can not do better than to cite the results that have been obtained in Italy since the passage and enforcement of a certain law dealing with this matter. (on November 2, 1901) as pointed out in "Public Health Reports" of the U. S. Public Health and Marine Hospital Service for November 2, 1906, page 1296. As Passed Assistant Surgeon McLaughlin there quotes, the law reads as follows: "Such protection shall consist of the application of a netting of wire, linen, cotton or other textile, over every aperture communicating with the exterior (doors, windows, ventilators, chimney, etc.) This netting must not be coarser than 25 meshes to each square centimeter of surface. The netting

must be applied solidly and be immovable. The entrance shall be protected by a double door, so arranged that the second door cannot be opened except when the first door is closed. The doors must be fitted with a contrivance for automatic closure. Special care must be taken with the doors of sleeping apartments. To protect the apertures of chimneys, the top of the chimney must be covered with a cap of iron wire, and the opening from the room into the chimney must also be covered with a netting of iron wire."

Here now, are the results since the enforcement of this law: In 1900, the year before its execution, there were 1,716 cases of malaria treated in the Roman Campagna, and 6,186 treated in the hospitals of Rome.

In 1902, the year after the regulation came into force, the figures were, 794 treated in the Roman Campagna and 2,750 treated in the hospitals of Rome.

In 1903, these figures fell to 320 and 2,461 respectively. In 1904, we find the number of cases of malaria treated in the Roman Campagna to have fallen to 162, as compared with 1,716 in 1900 and those in Rome to 2,961 as compared with 6,186.

Here are data of highly scientific value, since this remarkable reduction in the number of cases occurred, not in an epidemic disease in which the prevailing type of malignancy might show variations, but in a disease steadily endemic in this locality, as was mentioned above, for centuries.

Furthermore, the use of netting and screening against malaria conceived by di-Mattei, has been repeatedly demonstrated to be exceedingly efficacious by others, among whom might be mentioned Elliott of the Liverpool Expedition to West Africa and Grassi on the plains of Capaccio, Italy.

The size of wire netting to be used, was found by Celli to be a 1. to 1.5 square millimeter mesh, which is amply fine. Celli's experiments were made on employes in railroad construction, he screened all windows and chimneys, double-screened all doors which closed furthermore, with automatic locks, and white-washed the interior of the rooms. Laborers working at night wore masks for head and neck, and gloves. The incidence of malaria among those so protected was 5 per cent. in over 200, while those left unprotected practically all contracted the disease.

A clear conception of these serviceable findings, briefly stated above, should enable the sanitarian to accomplish great good in his

own community, should he be called upon to act in such a matter as the control of malaria. Not only must he know the points mentioned, he must furthermore study them out in minutest detail, and be able to apply his knowledge with unflinching zeal and perseverance.

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## LEADING ARTICLES

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### THE THERAPEUTICS OF THE NATIONAL FORMULARY.

#### III.

##### GASTRIC ULCER.

The process of healing requires much time, and this fact must be impressed upon the patient. It is common for the acute symptoms to subside and the patient feel that he is well. This is the most common and often serious mistake. Rest in bed is essential. The diet must be bland and unirritating. Personally, we feel that beef extracts and soups should not be given since this stimulates the flow of gastric juice. The white of egg is the best proteid. A milk gruel or diluted milk can be used. Peptonizing prevents its curdling in hard masses and thus will leave the stomach more promptly. Custard and junket can usually be given. Some authorities prescribe buttermilk and it is often well borne. When the stomach rejects everything rectal feeding must be resorted to.

The pain very frequently requires some medicine. Opium in some form must be given if the pain is severe.

R

Misturæ chloroformi et cannabis indicæ compositæ

N. F. .... ʒ i.

Sig. Twenty drops in a tablespoonful of water every 2 or 3 hours for pain.

In order to diminish the pain produced by the ingestion of food some drugs must be given before meals. The following is useful:

R

Chloral hydrat. ....	℥ i.
Bismuth subnitrat. ....	℥ ii.
Fluidextracti condurango .....	℥ ii.
Elixir cocae, N. F., q. s. ad.....	℥ iii.
M. Sig. Teaspoonful in water before meals.	

Often the pain after meals can be relieved by neutralizing the excessive acidity.

R

Misturae sodae et menthae, N. F.

Sig. Dessertspoonful one hour after meals.

For attacks of hemorrhage nothing equals a hypodermatic injection of morphine. Ergotin hypodermatically may be tried. Astringents given internally are rarely successful as the blood dilutes and renders them inert.

To stimulate the healing of the ulcer bismuth or nitrate of silver have been employed most frequently. The enormous doses of bismuth subnitrate recommended in the treatment of ulcer by Cramer several years ago do not seem to be generally employed. Olive oil which was heralded with so much acclaim has been found helpful in a minority of cases only. Still, it should always be tried.

Of the newer synthetic preparations orthoform and anesthesin are the most popular.

#### CARCINOMA VENTRICULI.

The treatment is almost entirely surgical. In inoperable cases the following may be prescribed:

R

Fluid extr. condurango .....	℥ ss.
Spts. chloroformi .....	℥ ii.
Elixir digestivi comp., N. F. ....	℥ vi.
M. Sig. Dessertspoonful in water after meals.	

Chloroform anodyne may be given in 30 drop doses when pain is present.

#### NERVOUS DYSPEPSIA.

There are a variety of acute functional disturbances of the stomach which the general practitioner is called upon to treat and which receive little comment in text books devoted to diseases of the stomach. The loss of appetite following any acute disease can best be combatted by the iron tonics. The lack of digestion following the sedentary life is best treated by exercise. Sometimes we are compelled to give medicine. Several tonics may be combined:



R

Elixir cinchonae, N. F. .... 3 iii.  
 Elixir cocae, N. F., aa. .... 3 iii.  
 M. Sig. Dessertspoonful in water before meals.

R

Fluid extr. coptis, N. F.  
 Tinct. nucis vomicae, aa. .... 3 iii.  
 Elixir euonymi, N. F., q. s. ad. .... 3 iii.  
 M. Sig. Teaspoonful in water before meals.

The National Formulary provides for a large number of these tonics. They may be given in a large number of conditions characterized by a loss of appetite, constipation, lassitude and a feeling of weakness. A few more prescriptions may be appended:

R

Tinct. nucis vomicae .... 3 ss.  
 Elixir cocae et guaranae, N. F. .... 3 iii.  
 M. Sig. Teaspoonful in water before meals.

R

Elixir cinchonae, ferri et calcii lactophosphatis, N. F. ... 3 vi.  
 Sig. Dessertspoonful in water after meals.

R

Fluid extr. boldi, N. F. .... 3 i.  
 Fluid extr. apii graveolentis, N. F. .... 3 ss.  
 Elixir gentianae, N. F., q. s. ad. .... 3 iii.  
 M. Sig. Teaspoonful in water before meals.

When constipation is a feature of the disease juglans may be added.

R

Fluid extr. juglandis, N. F. .... 3 ss.  
 Mist, rhei compositae, N. F., q. s. ad. .... 3 iii.  
 M. Sig. Teaspoonful 3 times a day.  
 This by no means exhausts the list.

## DIARRHEA.

There are so many drugs good for diarrhea, that the practitioner has a hard task to choose. The National Formulary also provides a large number of preparations, only some of which need be mentioned. For acute intestinal indigestion with much griping pain the following is very effectual:

R

Mist. chloroformi et cannabis indicæ comp., N. F. . . . . 3 i.

Sig. Fifteen drops every hour until relieved.

Why any physician should prescribe such an unscientific and indefinite prescription as the following we cannot comprehend:

R

Misturæ contra diarrhœam, N. F.

Average dose, 30 minims.

How does he know what he is getting? He must add the name of Squibb, Loomis, etc. Some of these mixtures under this title have the approval of time and experience and if the physician does not care to recall the ingredients it may be possible to remember the general name. Which one of these is really the best is difficult to estimate. Thielmann's diarrhea mixture is an elegant formula and should be used in those cases where prostration accompanies frequent discharges. It contains wine of opium, tincture of valerian, ether and the fluid extract of ipecac. Especially in dysentery, this preparation would be found very serviceable.

It should be more generally appreciated, however, that nearly all diarrheas will cease as soon as the patient discontinues supplying the putrefactive bacteria with pabulum. Starvation will check most diarrheas. Much less medicine is necessary if this rule be observed.

Before giving anything to check diarrhea a brisk purgative is indicated. Most adults object to castor oil and it is not often that it is necessary to punish them by giving this objectionable preparation.

R

Liquor magnesiæ sulphatis effervescentis, N. F.

Sig. Take the contents of one bottle.

Calomel and jalap may be conveniently prescribed:

R

Pulv. hydrargyri chloridi mitis et jalapæ. . . . . gr. x.

Sig. Take at once.

In infants and children the following will be found effective:

R

Pulv. rhei et magnesiæ anisati, N. F. . . . . 3 i.

Divid in chart. . . . . x ii.

Sig. One every hour.

Or, the following:

R

Magma magnesiæ, N. F. . . . . 3 ii.

Sig. Teaspoonful every hour.

Another preparation which can be given, especially to children is the elixir of rhubarb. Some will prefer:

R

Elixir rhei et magnesia acetatis, N. F. .... 3 ii.

Sig. Teaspoonful once daily.

In mild cases, especially when the diarrhea is persistent, a spiced astringent is very useful to check the watery discharges and soothe the intestine.

R

Elixir rubi compositi, N. F. .... 3 viii.

Sig. Tablespoonful every four hours.

This is an elegant elixir of blackberry and contains the astringent part of galls in addition to cinnamon, cloves, mace and ginger. Blackberry cordial (cordiale rubi fructus) contains the spices and fresh blackberry juice, but does not contain blackberry root or galls, and, therefore, is not nearly so powerful as the elixir. The latter preparation, however, is well tolerated by the children's stomach. We believe that the compound elixir of blackberry should be more generally prescribed. It contains harmless ingredients and with the proper restriction in diet all, except the severe inflammatory or ulcerative diseases of the intestine will promptly be favorably influenced by its internal administration. In children especially, in any form of enteritis in addition to other measures, the compound elixir of blackberry should be given.

Powders are often helpful, which have an astringent action. Several are provided by the National Formulary.

R

Pulv. catechu compositi.

This contains catechu, kino, krameria cinnamon and nutmeg. The practitioner will recognize at a glance the powerful astringent properties which this powder possesses. The average dose is 20 grains. It may be given with good effect in subacute and chronic diarrhea. In children it is liable to induce vomiting if given in full doses.

A powder of great value, though having less astringent properties than the foregoing, is the pulvis cretae aromaticus. As it contains saffron it may be made a bright yellow color by moistening and triturating the saffron with a little water or alcohol, before mixing it with the other ingredients (cinnamon, nutmeg, cloves, cardamom, prepared chalk). Pulvis cretae aromaticus cum opio explains itself. It contains 2.5 per cent. of powdered opium and the dose is about 15 grains.

Another powder which contains opium and may be prescribed for acute or chronic diarrheas is the *pulvis kino compositus* which contains kino, opium and cinnamon. Five parts of powdered opium in 100 parts of the powder is the strength of this narcotic. The dose of the powder is about 15 grains.

Antiseptics still play a great part in the treatment of gastroenteric infections. There are some who doubt their efficacy, but not those who have had much experience with the drug. Salol is still prescribed for this purpose and often acts well. It is insoluble in water but may be dissolved in oil. The National Formulary provides a medium in which such drugs as salol, iodine and salicylic acid may be dissolved, and at the same time makes an emulsion with water.

R

Salol ..... gr. xxx.  
 Petrolati saponati liquid, N. F.  
 Syrup rhei aromat. aa .....  $\frac{3}{4}$  i.  
 Sig. Teaspoonful every three hours.

or

R

Acid salicylici .....  $\frac{3}{4}$  i.  
 Petrolati saponati liquid, N. F. ....  $\frac{3}{4}$  ss.  
 Tr. opii camph. ....  $\frac{3}{4}$  iiss.  
 Aquæ cinnamomi, q. s. ad. ....  $\frac{3}{4}$  ii.  
 M. Sig. Teaspoonful every three hours.

Bismuth compounds may be added to these mixtures. Combined with astringent powders, the insoluble bismuth drugs are very often prescribed.

R

Bismuth subnitrat.  
 Pulv. catechu compositi, aa. ....  $\frac{3}{4}$  iss.  
 M. Divid. in pulv. .... x.  
 Sig. One every three hours.

An antiseptic and laxative effect may be obtained from the *tinctura rhei aquosa*; each fluid dram represents about 5 grains of rhu-barb. The dose is one fluid dram. It also contains about half a grain each of borax and potassium carbonate in each fluid dram. A very powerful astringent is the *tinctura kino composita*. It contains kino, opium, camphor, oil of cloves and aromatic spirit of ammonia. Each fluid dram represents  $\frac{1}{2}$  grain, each, of kino and powdered opium. Another preparation which may be prescribed for its tonic astringent action on the bowels is the *tinctura coto*, the dose of which is one fluid-dram.

In some cases of acute gastro-enteric indigestion the administration of "hot drops" seems to be very efficacious. In these cases the *tinctura capsici et myrrhæ* (dose 30 drops) may be prescribed. It should be well diluted. For a similar purpose preparations containing spices are prescribed. They may be combined in various preparations.

*Tincturæ aromatici*, N. F.

*Tincturæ capsici et myrrhæ*, N. F., aa..... $\bar{3}$ i.

M. Sig. Teaspoonful in water every two or three hours until relieved.

We neglected to mention previously that for children the *syrupus rubi aromaticus* may be used instead of the cordial as it contains the astringent properties of blackberry root in addition to spices and blackberry juice.

In gastro-enteric disturbances due to acid fermentation the neutralizing cordial may be prescribed with benefit.

R

*Syrupi rhei et potassii compositi*, N. F..... $\bar{3}$  iii.

Sig. Teaspoonful every three hours.

This preparation contains rhubarb, hydrastis, potassium carbonate, cinnamon and peppermint. It can be safely given to children.

Another preparation which can be used in the acid diarrheas is Squibb's rhubarb mixture (*Mistura rhei composita*).

Ipecac is a valuable remedy in various forms of colitis. For children Dover's powder often forms an ingredient of various powders in enteritis. The National Formulary provides the same drugs in liquid form.

R

Bismuth subgallat ..... $\bar{3}$  iss.

*Syrup ipecacuanhæ et opii*, N. F..... $\bar{3}$  i.

*Misturæ cretæ*, q. s. ad..... $\bar{3}$  iii.

M. Sig. Teaspoonful every three hours.

Nitric acid has received the support of some eminent clinicians for the treatment of dysentery. Whether it is superior to other acids, as sulphuric or hydrochloric, is still doubtful. We do not know of any clinicians who still prescribe it, and yet the National Formulary still gives place to Hope's mixture, the so-called *mistura antidysenterica*, or more properly, *mistura camphoræ acidæ*, N. F. Each fluid dram represents about one minim of nitric acid and three-quarter minims of laudanum.



In infants and children an agreeable article to check diarrhea (when necessary) is the *mistura sassafras et opii* (Godfrey's cordial). It contains about 2 minims of laudanum to each fluid dram.

Finally, as a good stomachic we must mention the *tinctura amara* (dose 30 minims), which contains gentian, centaury, bitter orange peel, orange berries, and zedoary. These stomach drops are indicated to overcome the loss of appetite, debility and malnutrition, which are often very stubborn after effects of gastro-enteric diseases.

J. Z.

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## OBSTETRICAL DIGEST

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### INDUCTION OF PREMATURE LABOR AND ACCOUCHEMENT FORCE.

Williams (Surgery, Gynecology and Obstetrics, September, '06.) relates the results following the artificial termination of pregnancy in the first five thousand women delivered in the Obstetrical Department of the Johns Hopkins Hospital.

"In this series of cases it was thought necessary to induce premature labor in eleven and to resort to accouchement force in one hundred instances, as follows:

Induction of premature labor by Krause's method.....	11
Accouchement force by Harris's method of manual dilatation of the cervix.....	83
Accouchement force by Champetier de Ribes balloon.....	15
Accouchement force by vaginal Cæsarean section.....	2

THE INDUCTION OF PREMATURE LABOR BY MEANS OF A BOUGIE (KRAUSE'S METHOD.)

This procedure was employed in all cases in which it was deemed advisable for the welfare of the mother to terminate pregnancy, but in which rapid emptying of the uterus was not necessary.

Under such circumstances, after exposing the cervix by means of a bivalve speculum, a long rubber catheter 10 to 12 mm. in diameter was introduced as far as possible into the uterine cavity and held in place by a vaginal pack of sterile gauze. This was usually accomplished without difficulty, and, as a rule, gave rise to uterine contractions within twenty-four hours; though, exceptionally, a longer period and the introduction of a second bougie was necessary to bring about the desired result. After the onset of pains, labor usually progressed

spontaneously and the patients were delivered without difficulty.

This method was employed in the following conditions:

Cardiac lesions with broken compensation.....	2
Pre-eclamptic toxæmia.....	2
Retention of dead fœtus.....	2
For experimental purposes.....	2
Hydramnios .....	1
Intrauterine infection during pregnancy.....	1
Overdevelopment of child.....	1

All of the patients recovered, and upon examination at the time of discharge, the cervix was found to be uninjured in 9 and only slightly torn in 2 cases."

He speaks well of this method:

"This is the safest method at our disposal in any case in which immediate delivery is not urgently indicated. It should therefore be the method of choice whenever the termination of pregnancy is demanded in cases of broken-heart compensation, pyelonephritis, retention of dead fœtus, and various other indications, but particularly in all cases of toxæmia which have grown gradually worse in spite of appropriate treatment, though an outbreak of eclampsia does not appear imminent. Its only drawback consists in its comparative uncertainty, as one has no means of predicting in a given case whether pains will supervene within a few hours after the introduction of the bougie, or whether it will be necessary to introduce a second one at the end of twenty-four hours. In the vast majority of cases, however, labor sets in within this period, and progresses in a most satisfactory manner, with a minimum amount of disturbance."

#### HARRIS'S METHOD OF MANUAL DILATATION OF THE CERVIX

"This method was employed in 83 instances, as follows.

Eclampsia .....	33
Pre-eclamptic toxæmia....	7
Placenta prævia .....	12
Danger to mother or child during the course of labor....	31

1. *Eclampsia.* Accouchement force was resorted to in 33 cases of eclampsia, with 7 deaths. As 5 of the patients did not regain consciousness after delivery, their deaths must be attributed to the underlying disease. On the other hand, 2 patients died as the direct result of the operation, one from infection and the other from incomplete rupture of the uterus."

He regards the operation as dangerous to a degree although very efficient. In more than half of the cases the cervix was deeply torn.

The prolonged manipulation often predisposes to infection. Quite a mortality followed this operation.

To quote:

"Upon summarizing the results obtained, it is found that Harris's method was employed in 83 cases, as follows:

	Cases	Deaths
Eclampsia .....	33	7
Toxæmia .....	7	2
Placenta prævia .....	12	3
Danger to mother or child at time of labor.....	31	1

Of the 13 deaths, 4 were clearly due to the operation (4.82 per cent.,) 1 patient having died from infection and 3 from hemorrhage following incomplete rupture of the uterus. Each of these deaths occurred in my own hands, so that no blame can be attached to my assistants. Moreover, it should be noted that they all occurred in the first 2,500 cases, so that several of them, at least, must be regarded as the premium paid for experience."

In discussing the value of Harris' method of manual dilatation, he admits that it is difficult to give a just estimate of the value of this procedure. He regards it as both difficult and dangerous in all cases in which the cervix is intact and the external os not obliterated.

To quote further:

"Accordingly, I do not believe that dilatation by this method should be attempted in this class of cases, unless the cervix is so soft that it will presumably offer but slight resistance. In all other cases it would seem to be more conservative to resort to vaginal Cæsarean section, or confine one's self to purely medicinal treatment, if not prepared to resort to radical surgical measures.

On the other hand, manual dilatation is comparatively safe and readily accomplished if the cervical canal is obliterated and the external os offers the only resistance. Indeed, under such circumstances, is dilatation frequently so readily effected that the chief care of the obstetrician must be directed toward guarding against its too rapid completion; and I have no hesitation in saying that the more slowly it is effected, the better it will be for the patient and the condition of her cervix."

He regards the Champetier de Ribes balloon as the best treatment in most cases of placenta prævia. Of vaginal Cæsarian section he says:

"This operation, as described by Dubrssen, is most satisfactory from an operative point of view, provided one is supplied with the suitable instruments and competent assistants. My experience, how-

ever, has led me to believe that it is not adopted for general employment in private practice, and can be undertaken only by those who possess special surgical training.

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### PLACENTA PREVIA.

Williams (*Ibid*) does not consider the Harris method of manual dilatation as adapted to the treatment of placenta previa. Dilatation with metallic instruments is dangerous, as the cervix is extremely friable and it will tear when least expected. He condemns this method very strongly. To quote:

"On the other hand, I believe that the ideal method of treatment in such cases lies in the use of Champetier de Ribes balloon, or in the performance of bipolar version followed by the gradual extraction of the fœtus. The results thus far obtained by abdominal Cæsarean section in the treatment of placenta prævia are not encouraging, nor do I believe that it is indicated. Possibly the future may teach us that vaginal Cæsarean section, as practised by Bumm, may have a field of usefulness in this condition; although at present I am not prepared to venture an opinion as to its merits."

Condon (*Ibid*) discusses the treatment of placenta previa by Cæsarian section and reports two cases. The patients made a good recovery. We will give his technic:

"Before the operation the patient received sixty minims of an equivalent of the fluid extract of ergot hypodermatically. The patient was then placed upon the table and the abdomen prepared ready for the incision before the anæsthetic was begun. Chloride of ethyl with ether sequence was the anæsthetic used. An incision was made through the left rectus muscle, commencing two inches above the umbilicus and extending four inches below. In the latter weeks of pregnancy the bladder becomes elevated in front of the lower uterine segment until it is practically an abdominal organ, so that in making the abdominal incision this fact must be kept in mind. Large sponges were packed around the uterus. It is unnecessary to bring the uterus outside of the abdominal wound, except in cases where one is suspicious of an infection within the uterus. To bring out the uterus, one must make a much longer incision; there is more trauma to the abdominal contents, and unnecessary tension upon the pelvic ligaments. The edges of the wound were retracted by an assistant, and a longitudinal incision of several inches was made through the uterus down to the membranes, but not through them. Then with the scissors the uterine incision was enlarged until about

the same length as the abdominal. Avoid making the incision toward the cervix, but as much upon the fundus as possible, on account of the vascularity of the uterus in the region of the cervix. If there is much bleeding from the cut surface of the uterine walls, as there was in case 2, the hemorrhage can be controlled by applying a long-bladed forceps with a light spring, such as a Doyen intestinal clamp, using just enough force to compress the vessels, but not sufficient to bruise the tissues. The membranes were ruptured with the scissors and the child extracted, taking hold of the part which first presented. In both cases here reported, the presentation was a vertex.

The cord was cut between two clamps, and the child given to an assistant. A few minutes' time was allowed for the uterus to contract and for the placenta to loosen naturally. If the placenta does not loosen, it can be removed with the hand. The uterus was then packed with hot compresses to check the bleeding.

An assistant should be instructed as to how to compress the uterine arteries in case the uterus does not contract and check the hemorrhage from the placental site. The placing of the elastic ligature before opening of the uterus is unnecessary, and one can see how it might do harm. The uterine cavity was closed with a continuous suture of No. 4 plain catgut. The continuous row was begun at the cervical extremity of the incision; this was reinforced with three or four interrupted sutures of the same. The peritoneum, where not closely approximated, was brought together with fine catgut sutures similar to a Lembert.

The abdominal wound was closed by over-lapping the aponeurosis in the same manner as in the Mayo operation for umbilical hernia. If closed in this way, there is very little danger of a hernia developing in the cicatrix.

Before the abdomen was closed, several liters of normal salt solution poured in."

### OVARIAN CYSTS AND PREGNANCY.

It should be remembered that an ovarian cyst discovered at the beginning of pregnancy may be mistaken for ectopic pregnancy. The subject has scarcely received sufficient attention. Patton (*Ibid*) reports three cases of ovarian cysts complicated by pregnancy. Then he reports his study of the literature.

"The most common tumors of the ovary that may complicate pregnancy are multilocular cysts, monolocular cysts, dermoid cysts, fibroids, and carcinoma. These tumors may occupy the pelvis and thus form an actual obstruction to the advance of the child's head or



they may be entirely above the superior pelvic strait and be of danger principally through accidents to the tumor during pregnancy, delivery, or of the puerperium. The vast majority of the collected cases were cysts occupying the true pelvis and interfering with the advance of the child's head. On account of the small size of these tumors, many were not discovered until the onset of labor. Naturally, the indications for treatment in this condition are absolute, but there seems to be an element of doubt in the minds of medical men as to the proper course to pursue if the tumor lies above the superior pelvic strait and does not from an actual obstruction to the birth of the child. In the cases I have reported, the tumor in each instance was above the strait. Although I have found references to 1,100 cases of ovarian tumor complicating pregnancy, many were so poorly reported that they could not be utilized in forming statistics, many were solid tumors or dermoids, and the vast majority were lodged in the pelvis.

First, he tells of 95 cases which were treated on the expectant plan. The dangers are not so great during as after labor, to quote:

There were 25 deaths in the 95 cases. It is interesting to know that only 4 of these 25 deaths occurred in cases that were operated after the termination of the labor, while 21 deaths occurred in those cases that were treated wholly by the expectant plan. This high death-rate is undoubtedly due to the large percentage of complications found during the puerperium, and would have been considerably larger if operations had not been performed in over half of the 95 cases during the puerperium.

Twisted pedicle was the most common complication met with. It occurred 29 times, 4 occurring before labor and 25 during the puerperium. It has been claimed that twisted pedicle does not occur oftener in cases associated with pregnancy than in the non-pregnant case, but it certainly is extremely common during the puerperium. When the uterus contracts after labor, the broad ligament remains very lax, and allows a cyst situated above the pelvis to sink down, and in so doing to rotate with a resulting twist in the pedicle. The large percentage of twisted pedicles probably accounts for the number of cases of suppuration, hemorrhage, rupture, and peritonitis encountered.

Other causes of death were rupture of the cyst, hemorrhage and peritonitis.

He gives the following table as showing the results obtained by different methods of treating ovarian cyst complicating pregnancy, also conclusions:

Cases .....	184	95	31	11	321
Maternal deaths .....	8	25	12	4	49

Death-rate, per cent.....	4.3	26.3	38.7	36.5	15
Interruption .....	35	18	17	7	77
Interruption, per cent.....	19	18.9	34.8	63.6	24
Twisted pedicle .....	46	29	1	1	77
Twisted pedicle, per cent.....	25	30.5	2.9	9.9	24
Rupture .....	4	13	6	1	24
Rupture, per cent.....	2.7	13.6	19.3	9.9	7.4
Suppuration .....	0	6	3	0	9
Suppuration, per cent.....	0	6.3	9.6	0	2.8
Hemorrhage .....	0	3	1	0	4
Hemorrhage, per cent.....	0	3.1	2.9	0	1.2
Rapid enlargement .....	23	12	3	0	38
Rapid enlargement, per cent.....	12.5	12.6	9.6	0	11.8

From this table one is justified in drawing the following conclusions:

1. Ovarian cyst is not an uncommon complication of pregnancy.
2. Ovarian cyst is a dangerous complication of pregnancy. This danger varies with the kind of treatment instituted for its relief.
3. Removal of the cyst by laparotomy before labor yields the best results for mother and child.
4. The mortality in laparotomies, during pregnancy, for removal of an ovarian cyst is not greater than in the non-pregnant patient.
5. There is no definite elective period in which laparotomy should be performed. The case should be operated as soon as the diagnosis is made.
6. Dangerous complications are more frequent in ovarian cysts with pregnancy than in those where pregnancy is absent.
7. Ovarian cysts are especially dangerous in the early puerperium.
8. Tapping an ovarian cyst gives only temporary relief, is not curative, and is a dangerous procedure. It should only be employed in those cases of enormous distention where operation is absolutely refused.
9. Induction of labor and craniotomy entail absolute death of child, and are of great danger to mother.
10. If for any reason, treatment by other means than laparotomy before labor becomes necessary, it should be followed by early removal of the cyst after the puerperium.

## THE CONDUCT OF THE THIRD STAGE OF LABOR.

Strassmann states that so long as the placenta remains attached to the uterine wall, light pressure on the fundus of the uterus will cause the veins of the cord to swell markedly, so that the hand holding the cord will perceive a distinct fluctuation wave. This may be noticed even hours after delivery of the child, but disappears as soon as the placenta becomes loosened from the wall of the uterus.

Expression of the placenta should not be attempted for at least a half-hour post-partum, even if the indications of placental loosening are present. On the other hand, should these indications not be present, the obstetrician should wait and not try expression oftener than every half-hour, especially large foetuses and twin births being exceptions to this rule.

After artificial delivery, the hemorrhage, which normally occurs from the different small tears, should not be regarded as an indication for immediate delivery of the placenta, but ergot should be used and uterine contractions should be aroused.

The third stage of labor should not be considered complete with the expulsion of the placenta, but the obstetrician should watch the uterus for at least half an hour, and then express the blood-clots which have collected within the uterus and vagina.

Strassmann has made use of rubber gloves in general obstetrical surgery for several years past, though does not use them when rupturing the membranes or when holding shreds of membranes, for obvious reasons.

After manual removal of the placenta, or portions thereof, he believes it best to refrain from douching the uterus or vagina, or at least to use sterile normal salt solution, or weak lysoform solution only. The stronger antiseptics, or even alcohol, are not to be used, because of the dangers of absorption.

Since it is possible for a small piece of placenta to be retained, even though the greatest care and precautions have been taken, whenever high temperature occurs during the puerperium the uterine appendages being healthy, the obstetrician should carefully palpate the cavity of the uterus before considering further measures.—*Zeitschrift für Geburtshilfe und Gynäkologie*, bd. lvii. h. 2. *Surgery, Gynecology and Obstetrics*.

## PYELITIS IN PREGNANCY.

A discussion of the subject of pyelitis in pregnancy and puerperium before the Obstetrical Society of Boston (December 18, 1906)

brought out several interesting and valuable points. (*Bost. Med. and Surg. Journ.*, February 21.)

Swift mentioned that within the past few years a number of cases have been reported which are of special interest to the obstetrician and surgeon. Pyelitis in pregnancy, no doubt, is frequently overlooked. He continues:

"At the French Congress of Surgery in 1892 Dr. Reblaud reported 5 cases—3 antepartum, 2 postpartum—which he had studied, and described the symptoms which have been common to the cases reported since. These symptoms are, pain in the side (usually the right, increased frequency of micturition, elevation of temperature and pus in the urine.

The urine is usually acid, and, from the bacteriological examinations which have been made, this seems to depend on the infecting bacteria. About all the cases, studied bacteriologically, show the colon bacillus as the cause of the trouble, and the course of the disease to be a descending, rather than an ascending, infection, that is, the infection takes place primarily in the kidney, or its pelvis, rather than through the bladder. It is supposed the infection is brought by the blood, and the reason for its development in the pelvis of the kidney is on account of the changes which are caused in the ureter and pelvis of the kidney by pressure on the ureter by the gravid uterus.

Reblaud says: "Where the ureter crosses the pelvic brim it is compressed by the uterus. This causes a hydronephrosis, and this dilatation, although aseptic, causes modifications and lesions which furnish a place of least resistance for bacterial development."

The pain is usually in the lumbar region and radiates in the direction of the ureter, but that it may be referred to other regions is shown by the fact that some of the cases have been originally diagnosed and operated on for gall-bladder disease, appendicitis and extra-uterine pregnancy. The pain may be constant or intermittent, the remissions being explained by the compression being removed by a change in the position of the uterus. The fever may be slight or high, and accompanied by rigors. Palpation of the lumbar region shows a tenderness of the kidney, or even a fluctuating tumor may be made out."

The writer discusses the etiological significance of ureteral compression by the gravid uterus. The right side is more frequently affected than the left. He writes as to the effect on pregnancy as follows:

"Cases of spontaneous premature delivery have been reported, but they seem to have been due to the high temperature rather than to the actual effect of the disease. Most of the cases have gone to term with

a cessation of the symptoms when the pressure on the ureter has been removed. The question of inducing labor must be considered in the interest of the woman, and depends on the condition of her health caused by the disease. Where an abscess is diagnosed the question of surgical intervention arises, the point to decide being whether it is better to induce labor, await normal delivery, or do a nephrotomy. The time in the pregnancy and the amount of damage being done will be important factors here. Where drainage through the ureter seems to be sufficient, in view of the fact that these cases apparently recover shortly after delivery, it would seem better not to interfere surgically; but if the drainage is not sufficient then, of course, drainage above the point of obstruction must be furnished. Because the disease has appeared in one pregnancy is no reason for expecting its occurrence in succeeding ones if the pus has entirely disappeared from the urine, but as long as there is pus in the urine pregnancy should be avoided.

The origin of the disease seems to be most frequently connected with some alimentary disturbance. Here is a cause for the development of the colon bacillus, which is then carried by the blood throughout the system, and then being retained in the dilated pelvis of the kidney flourishes here and causes the inflammation."

The treatment consists in keeping the patient in bed, especially on the side that is not affected. She should be given a milk diet. Urinary antiseptics are helpful. To quote further:

"In going through the literature I have found 40 cases, my own making 41. Erich Opitz in the *Zeitschrift für Gynäkology*, Bd. lv, 1905, has an article on this subject, but being in German I was not been able to read it. An abstract of the paper, however, by Henry Russell Andrews, is in the *Journal of Obstetrics and Gynecology* of the *British Empire*, vol. viii, November, 1905. Opitz collected 79 cases and added 5 from the Marburg clinic. In a series of 53 cases spontaneous premature delivery occurred 23 times. Of 60 children born, 7 were stillborn or died soon after birth.

In my collection of 41 cases, there were 15 primiparae, 14 multiparae, not mentioned 11. The right side was affected 37 times and the left 4. Twenty-eight cases went to full term. Spontaneous premature labor was induced once and in 9 cases, the pus having disappeared from the urine, the patients passed from observation. Nephrotomy was done once antepartum, 4 times postpartum. The colon bacillus is reported 17 times; on bacterial examination recorded in the rest."

Nervell (*ibid*) reported several cases of pyelitis in pregnancy and the puerperium. The right kidney was involved in all cases. He writes thus of the diagnosis:



The differential diagnosis between inflammatory conditions of the abdomen during pregnancy is very difficult, if not impossible, and unnecessary operations will undoubtedly be frequently performed on account of the impossibility of distinguishing accurately between an acute attack of appendicitis and an acute pyelitis. Time will, of course, show the true diagnosis, but the history of acute appendicitis during pregnancy or in the early days of the puerperium shows such a large percentage of fatal cases that time is the one factor which cannot be given, and it is unquestionably safer to operate unnecessarily for a pyelitis than to delay operation on a gangrenous appendix.

Most cases are infections by the colon bacillus.

Hare (*ibid*) also reported a very instructive case of the same disease.

### THE TREATMENT OF ECLAMPSIA.

At the January meeting of the Obstetrical Society of Philadelphia Hirst gave his conclusions as to the treatment of eclampsia (*Bost. Med. and Surg. Jour.*, February 21):

"The routine treatment consisted of,

1. Chloroform to avert the attack, if possible.
2. Fifteen minims of fluid extract of veratrum viride hypodermically.
3. Wash out stomach and through the tube introduce 2 ounces of castor oil and 4 drops of croton oil.
4. Hot vapor bath or hot pack for thirty minutes in every four hours.
5. Hypodermoclysis of salt solution Oi under breast every eight hours.
6. If convulsions recur, repeat veratrum viride in five-minim doses every hour for three doses, and then if blood pressure is still high and patient cyanotic, venesection is performed, removing 8-16 ounces of blood.

7. Under ordinary circumstances let the labor alone.

Morphine and pilocarpine are not used routinely, but their use is restricted to desperate cases only. Venesection is not used routinely, at least until veratrum viride has been given a trial.

Accouchement force is used only under the following conditions:

1. When the patient is far advanced in spontaneous labor, forceps are applied.
2. If patient is seen very early after the first onset of convulsions, it may be advisable to interfere.

3. If patient is going from bad to worse under treatment, the uterus is emptied as a last resort. The method employed is either vaginal hysterectomy and forceps or the Pomeroy bag, followed by forceps. The latter method is probably the better. The cases studied were 88 cases of eclampsia and 278 cases of albuminuria. This treatment gave a mortality, excluding cases brought in in a moribund condition, of 13.4%. Of the cases of albuminuria, 40 had had eclampsia in previous labors (one four times) but escaped under treatment."

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### INVALIDISM FOLLOWING CHILDBIRTH.

Applegate (*N. Y. Med. Jour.*, February 9) asks the question, why women are not more frequently in as good health after labor as before pregnancy. The author favors the belief that the predominant etiological factors are faulty technic and too little regard for the minor details in the conduct of pregnancy, labor and the puerperium.

"*Predisposing Factors.*—The predisposing factors are: (1) Lack of knowledge on the part of the laity as to the importance of proper hygienic measures; (2) inattention on the part of the practitioner, not especially interested in obstetrical work, as to the position of the child, pelvic mensuration, and the effect of pregnancy on the maternal organism, all of which effect materially the character of mechanism and the subsequent condition of the patient.

Most women have a very poor conception of the proper hygiene of the pregnant state, as to clothing, exercise, bathing, and diet as preventive measures against the various manifestations of toxæmia. Education along this line is much needed.

Diagnosis of the position of the child and the approximate size of the pelvis and fœtus by mensuration are prerequisites for the successful conduct of a labor. The abnormal position of the fœtus can, in the large percentage of cases, be converted into the normal by external version if recognized in due time."

He gives the following factors during labor as the principal cause of invalidism:

"1. The influence of posture on mechanism. 2. The modifying effect on injuries to the birth canal by anæsthesia. 3. Protection of the perineum during birth of the shoulders as well as the head. 4. Instrumental delivery.

The most favorable maternal position is not always the lateral, nor always the dorsal, but the position, which favors correlation of the appropriate diameters between mother and child that will facilitate the birth of the latter with the least amount of injury to the former.

The left lateral position, or possibly lateroprone in exceptional cases, favors anterior rotation of the fetal head with the least amount of injury to the maternal pelvis when the child occupies the left positions, and *vice versa* when the child occupies the right positions."

After a full discussion of these points he offers the following criticism of the technic often employed:

"First. Against the method of repairing the perinaeum before the expulsion of the placenta. The reasons are self evident.

Second. The attempt to scientifically repair anything but the minor degree injuries in the absence of competent assistants, with poor light and the inability to observe strictly the rules of asepsis and antisepsis.

Third. The method of repairing the perinaeum on the skin surface and depend upon union by granulation on the interior. Relaxation and partial or complete rectocele results subsequently.

Fourth. Against allowing the minor degree laceration to take care of itself. If the custom of making a second examination on the second or third day after labor is adopted they may be found when not previously suspected. It matters not how slight, nor apparently insignificant the injury, it breaks the line of continuity, favors relaxation, and is an important factor in subsequent invalidism.

Fifth. The freedom of patients before involution is well established. There can be no reasonable objection to a patient getting out of bed by the ninth or tenth day, providing the then gravid uterus is repositioned when lying down by elevation of the hips, or, better still, occupying the knee chest position for five minutes, thus releasing tension on the uterine supports and aiding in the process of involution. The position should be taken each night on retiring, from the tenth day to the end of the third week.

Sixth. Against the use of douches after normal labor except for some positive indication."

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### PUERPERAL INFECTION.

McDonald (*Albany Med. Annals*) after a careful study of six cases of puerperal infection gives the following conclusions:

A consideration of these six cases teaches many things in regard to the diagnosis and management of puerperal infection in the more advanced stages of the disease. It may be seen that while streptococcus infection is usually the most common and severe type of infection, other organisms which usually produce clinically mild symptoms, may run a severe course and cause death.

Autoinfection must be considered to include infection from foci of bacterial disease in distinct parts of the body. Pregnant women suffering from such distant infection require most watchful care. Autoinfection from the genital canal is probably more common than is generally supposed. This is indicated in a study by Bumm and Sigwart of the bacteriology of the secretions of women in the later months of pregnancy. The streptococcus was found to be present in more than 38 per cent. of the cases and they conclude that with very careful examination aerobic streptococci may be found in the secretions of at least 75 per cent of all women during pregnancy and the puerperium. Of the women having streptococci, 20.4 per cent. had fever.

From this fact it may be seen that the presence of pathogenic microorganisms in the genital canal is by no means sufficient evidence upon which to base a diagnosis of puerperal infection, and even when combined with constitutional disturbances the first step only has been taken toward the proper diagnosis of the condition. The term puerperal infection should be broadened to include infection elsewhere than in the uterus, and the location and nature of such lesions should be recognized before any operative measures are undertaken. This can only be done by exact physical examination, examination of urine, blood, etc., and a proper knowledge of the varied anatomic manifestations of infection. The frequency with which pain is right-sided in hydronephrosis and pyelitis should be remembered in differentiating the diagnosis from appendicitis.

The utter futility, and even harmfulness, of curettement, if attempted in such cases as those here reported, is readily seen; and when the varied character and oftentimes widespread distribution of puerperal infection are considered, the explanation for the high mortality (over 70 per cent.) of hysterectomy in that condition is obvious.

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## YESTERDAY AND TO-DAY

### COUNTER-IRRITANTS.

We feel that a reproduction of a part of an article by Inman (*Brit. Med. Jour.*, July 24, 1858) may do good in that it calls attention to a mode of treatment, out of fashion at present, but which nevertheless has a powerful influence on the body: "There is at the present day a wide-spread doubt respecting the doctrine of counter-irritation generally, and the use of blisters particularly. It is argued, and very justly, that if blisters act simply as derivatives or revulsives, it would be most judicious to apply them at a considerable distance from the diseased spots; and yet, as a general rule, experience proves that their value is in proportion to the nearness of the counter-irritant to the part affected. But still greater doubts are entertained about the doctrine that the supervention of one disease is efficacious in curing another. The inquiry naturally branches into two directions; first, Is this dogma true? secondly, If so, does it explain the *modus operandi* of counter-irritants?"

That the dogma is true *to a certain extent*, there can be no reasonable denial. We are many of us familiar with the phenomena of metastasis in disease. We have seen a white swelling of the knee get suddenly well, while the lungs have as suddenly become affected fatally; both phenomena taking place in the same fortnight. Hydrocephalus may be replaced by cervical abscesses. We have seen erysipelas in the foot get well *pari passu* with the invasion of phrenitis; then the erysipelas has reappeared, but in the calf of the leg, the head symptoms getting well; the disease has again left the leg, and invaded the peritoneum; and has again left this to settle over the shinbone. We have seen recovery from jaundice followed by a cutaneous eruption; gout in the stomach replaced by gout in the toe; swelled testicle may supervene on cessation of gonorrhœal discharge; and suction of the mamma in a woman recently confined will produce uterine contraction; pneumonia will sometimes terminate in some critical discharge; and a monthly hæmoptysis may replace the usual uterine flow. Other instances will occur to many of my readers. But on the contrary, there is abundant proof that the supervention of one disease may occur without any beneficial influence over a preceding one. Thus, ul-



ceration of the bowels will not cure pulmonary consumption; gout in the right will not ameliorate gout in the left foot; diabetes will not cure ascites from diseased liver; injury or traction on the mamma will not produce contraction of the uterus before the normal time for parturition; erysipelas of the skin of the face will not prevent its affecting the brain; sore-throat will not cure syphilitic lepra, nor will an irritant to the urethra cure swelled testicle; pruritus valvæ is compatible with increasing uterine disease, and nettle-rash with ulcer of the stomach.

Granting then, that there is a limited amount of truth in the dogma, we ask if it can explain the *modus operandi* of counter-irritants? Does it explain why a blister will increase an acute disease, and cure a chronic one? Why a blister to the side in chronic pleurisy will do more than a brisk cathartic, *i. e.*, a blister to the bowels? Why a blister to the head in typhoid coma will rouse a patient who was utterly insensible to the presence of a bed-sore? And lastly, if the doctrine be true, ought it not to lead us to use counter-irritants in every disease, no matter what its nature?—a plan the absurdity of which none of us could fail to see.

The author then discussed the action of strong irritants on the skin and found that all had mostly a local action; some few seemed to affect the system more or less generally. He enunciated the following law: "Any material capable of being absorbed through the skin acts primarily and most energetically on the spot to which it is applied and on the parts in its vicinity; and secondly, and more mildly on the system generally."

Again he declared that the counter-irritants commonly in use are direct irritants to the part to which they are applied; their acrid principle is absorbed and acts in the milder form as a stimulant to the immediate neighborhood of its introduction; at last it enters the circulation and affects distant organs. He continued:

"Let us now run rapidly over a few diseases in which blisters are empirically employed, and endeavor to see whether these remarks are applicable to them.

1. Blisters near the eye do harm in the acute stages of iritis, ophthalmia, and sclerotitis. They do good occasionally in the later stages, when the disease is chronic.

2. Blisters to the throat are almost invariably prejudicial in the early stages of croup.

3. Blisters do harm in the early stages of pleurisy, pneumonia, and pericarditis. They do good in the later stages—at that period,

in fact, in which, could we use direct means, we should employ a solution of sulphate of zinc or of nitrate of silver to the inflamed surface.

4. Blisters occasionally do good in bronchitis. When they do, the advantage gained is not immediate; it rarely begins until twenty-four hours after the blister has risen, and when the cantharidine has had ample time for absorption and for circulation through the blood-vessels. This view of the action of blisters in bronchitis is borne out by the advantage derived occasionally in that complaint by the internal administration of turpentine, balsams, warm gums, essential oils, arsenic, and iodide of potassium, and other drugs, which permeate the system, and have locally stimulating effects. A blister will do as much harm in bronchitis in the early stage, as will alcohol, copaiba, and myrrh; and as much good in the later, as will wine, ammoniacum, ammonia, and polygala.

5. Blisters are positively injurious in peritonitis, and in all its stages; we have seen that they will actually produce the disease in dogs and rabbits.

6. They are equally injurious in recent gonorrhœa and orchitis. They are very serviceable in chronic clap and swelled testicle.

7. Blisters to the sacrum, and copaiba internally, have a very beneficial influence upon leucorrhœa.

8. Blisters to the head have a decidedly stimulating effect on the brain in the coma attending typhus or hydrocephalus.

In other words, blisters are prejudicial when the absorption of their cantharidine or stimulating principle brings it into contact with an actively inflamed tissue. They do good whenever that principle meets with an organ in a state of chronic inflammation, such as would be treated by direct stimulation, were it on the surface of the skin.

I pass by as hypothetical, and foreign to our subject, the influence of blisters in relieving simple pain, and in removing serous accumulations from the pleura or pericardium, merely observing that, if the doctrine ordinarily held respecting the power of blisters in promoting serous absorption were correct, blisters ought to be more useful in ascites and hydrocele than in any other disease—complaints in which the distance between the affected membranes and the blister is as small as it is possible in the nature of things to be. I may, however, remark, in passing, that hydrocele in young children is occasionally cured by stimulating applications to the skin of the scrotum, through which they are doubtless absorbed.

If there be any real foundation for the foregoing conclusions, we ought to be able to apply them to other counter-irritants besides blisters. Let us give to each a few words. Boiling water vesicates the

skin readily, but experience proves it, as a general rule, void of therapeutic power. Why? Because its influence is confined entirely to the spot to which it is applied. The actual cautery rarely if ever does good, unless where it is used for diseases which have their seat so near the surface of the body that the stimulating effect of the heat reaches them readily. Whenever the diseased portions are deep-seated, it is a matter of great doubt whether the actual cautery is of any more use than an issue or seton would be; and that, to say the least, is very problematical. The potential cautery, or caustic issue, is on the whole preferred to the actual cautery, or to the use of a seton. We explain this by supposing that a large portion of the caustic is absorbed, and acts as a direct stimulant to a greater depth than either of the other two forms of counter-irritation.

Mustard plasters are by many used instead of blisters, and they have somewhat similar effects.

Turpentine is an especial favorite in tympanitis. It is applied extensively to the distended abdomen in fever and other affections, and generally with success. Why? Because it is absorbed through the skin, and acts as a local stimulant upon the atonic bowels, without producing at the same time distressing cutaneous soreness, or without disordering the stomach, as it is apt to do when administered by the mouth. Its prolonged use produces purging. Iodine, in its various forms, is a counter-irritant of great efficacy, and is useful in direct proportion to the nearness with which it can be applied to the diseased parts. It is especially serviceable in enlarged bursæ and ganglia, in buboes, in nodes, and in rheumatic affections of the knee, ankle, and wrist-joints. Of its absorption there can be no doubt. Equally certain is it that its valuable properties are independent of its producing vesication. Ammoniacal, terebinthinate, crotonic, or other stimulating embrocations, liniments, or ointments, are only serviceable where there is a sluggish or atonic condition in the circulation in the parts below to which they are applied. Thus, in acute gout, "linimentum ammoniac" and friction are intolerably painful; yet, when the gout is chronic, they are not only serviceable, but pleasant. So in rheumatic pains, where the joints are hot and burning, no such liniments can be borne; and yet, where the joints are cold and the circulation very languid, their stimulating property gives great relief. This explanation receives corroboration in the fact that the patient experiences in the latter part of his complaint as much relief from internal warmth and stimulation as from external.

Of course, this author knew nothing concerning phagocytosis and chemotaxis, and the modern explanations are somewhat different. It

is well, however, to note his summary: "If the views we have been endeavoring to enunciate are true, corollaries of great practical importance may be drawn from them. If it be true that counter-irritants or blisters act as direct local stimulants in internal inflammations, and are beneficial only when those inflammations are asthenic or chronic, and if it be true (as experience shows) that such inflammations, etc., on the surface of the body, are rendered worse by low diet and depressing remedies, while they are improved by generous diet and tonic medicines, we are not driven to the conclusion *that the use of counter-irritants is incompatible with the antiphlogistic regimen; and that to use a blister externally without a judiciously stimulating plan internally, is contrary to sound, rational, and philosophic medicine?*

In conclusion, let me recapitulate the points I have endeavored to bring before your notice.

1. That there is no essential difference, except in degree, between the action of caustics and counter-irritants generally, when applied to the unbroken skin.

2. That these substances act intensely upon the part to which they are applied; more gently, but yet severely, upon the parts below.

3. That blisters, etc., are only useful in those cases in which stimulants would be locally applied by the surgeon, if the parts diseased were on the surface of the body, or within reach of his hand.

4. That blisters, etc., are not essentially different in their *modus operandi* from such stimulants as iodide of potassium, arsenic, copaiba, the warm balsams, essential oils, resins, etc., except in degree.

5. That blisters are useful (in appropriate chronic cases) in proportion to the nearness of the diseased organ to the blistered surface.

6. That, as a general rule, blisters have only a temporary influence; and that, where they are really necessary and useful, they require to be repeated.

7. That the application of a vesicating irritant or stimulating material externally involves the idea of there being local or systemic debility in the sufferer, to correct which such stimulant is applied.

8. That counter-irritants of all kinds are physiologically incompatible with low diet, antimonials, purgatives, or other depressing remedies, inasmuch as it is manifestly absurd to stimulate locally, and yet depress generally.

We are now engaged in a great controversy with medical heresies, the action of caustics and counter-irritants generally, when applied to prove our weapons ere we enter the lists; nor can I help believing that our success will be triumphant or otherwise, according to the soundness of the materials in our armoury.

## BOOK REVIEWS

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**TEXT-BOOK OF PSYCHIATRY.** A Psychological Study of Insanity for Practitioners and Students. By Dr. E. Mendel, A. O. Professor in the University of Berlin. Authorized Translation. Edited and enlarged by William C. Krauss, M.D., Buffalo, N. Y., President Board of Managers Buffalo State Hospital for Insane; Medical Superintendent Providence Retreat for Insane; Neurologist to Buffalo General, Erie County, German, Emergency Hospitals, etc.; Member of the American Neurological Association. 311 Pages. Crown Octavo. Extra Cloth. \$2.00 net. F. A. Davis Company, Publishers, 1914-16 Cherry Street, Philadelphia, Pa.

We do not hesitate to recommend this admirable work to practitioners generally. It is eminently practical. It is really astonishing how much ignorance the ordinary practitioner exhibits when meeting a patient with mental disease. A careful perusal of this work will dispel this lack of knowledge. The definitions are fine. The translation is clear and the additions valuable. We admire especially the concise classification and the clear presentation of difficult phases of the subject. He who runs may read this work and be benefitted.

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**PSYCHOLOGY APPLIED TO MEDICINE.** Introductory Studies. By David W. Wells, M. D. Lecturer on Mental Physiology, and Assistant in Ophthalmology, Boston University Medical School; Ophthalmic Surgeon, Massachusetts Homeopathic Hospital, Boston; Oculist, Newton (Mass.) Hospital. Illustrated, nearly 200 Pages, with Bibliography and Index. 12mo. Extra Quality Paper. Neatly Bound in Cloth. Price, \$1.50 Net. F. A. Davis Company, Philadelphia. 1907.

The increasing attention given to psychology and psychological medicine is one of the striking incidents of modern times. This little work will be welcomed by those physicians who have not given the subject any thought. Boston, now, seems to be the center of this new movement—the study of mental influence in physical processes. Christian Science undoubtedly has indirectly fostered this study. There is much to be discovered, however, and this work does not seem to add anything new to the subject, although its style of presentation is very interesting.



# ST. LOUIS

## COURIER OF MEDICINE.

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### EDITORIAL COMMENT

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#### MEASLES.

Of course it is well known that measles is followed by a considerable mortality; but it is scarcely necessary to remind practitioners that in spite of this danger it is best that every child have the disease. Imagine the danger in any community in which most of the adults are not immune to this exanthem. The suffering that an outbreak of the disease would produce can scarcely be pictured. For it is notorious that the disease is commonly more severe in the adult than in the child. If a person must run this risk once during their lives it is better that this be done in childhood, when not so much is dependent upon him. We can not conceive of that ideal hygienic state when measles will not exist. Its importation from surrounding districts is almost certain, though parts of the country may be entirely free from the disease for varying periods. Its entire eradication from the civilized world is impossible. It is, therefore, almost certain that every person some time during his life will be exposed to the contagion. Why not take this exposure in childhood?

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#### ISOLATION IN MEASLES.

Because the recognition of measles in the first two days of the prodromal stage is almost impossible, and the disease during this time is very contagious, the isolation of an affected child from the children of the household is absolutely useless. By the time Koplik's spots appear all susceptible persons in the family have already re-

ceived the infection. In the case of very weak infants, however, an effort should be made to keep the infected person from coming in contact with the little one. Isolate the infant, but do not isolate the patient.

The question of keeping children sick with measles away from school needs no discussion. It is quite another matter when the Board of Health excludes every child of the family whether immune or not. It often breaks very seriously into the child's study and causes distress to the parents. The probability of carrying the contagion by the immune child is very remote. In fact there is some doubt that measles can ever be carried by a third person. Practically, the instances of this method of carrying the disease are very few. Therefore, the exclusion of immune children seems an unreasonable demand to which the people as a whole will scarcely give consent.

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#### THE NOTIFICATION OF MEASLES.

The health commissioner of St. Louis should receive the praise of the profession generally for insisting that the law in regard to the reporting of contagious diseases be strictly enforced. While the law as applied to measles and chicken pox has been considered "dead" for many years, there can be no doubt of the wisdom of enforcing even that part of the ordinance in reference to the less severe or dangerous exanthemata. In fact the list of diseases should be greatly extended. Pneumonia should likewise be classed among the disease to be reported. It is only after receiving word as to the prevalence of infectious diseases that the Board of Health can take the proper steps in eradicating the infectious foci. The prevention of the pneumococcus infection is really a more important task than the prevention of measles. The energy expended in trying to prevent the spread of measles might be more rationally spent on other severe infectious diseases. The insidious onset of measles almost invariably renders prophylactic measures futile.

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#### THE FACTOR OF SAFETY IN THE HUMAN ORGANISM.

Dr. Meltzer in his Harvey Society lecture in a very interesting manner compared the "factors of safety" in machines and those of the human body. He does not agree that "wise nature constructs her organisms on such an efficient principle as permits the accomplishment of the greatest amount of work on a minimum supply of material and energy." Such a distinction between a dead mechanism and a

living organism would be fascinating if this distinction were really true. The lecturer drew attention to the fact that the complex organs are usually in considerable excess of ordinary requirements. One-third of the kidney and less than one-half of the lung are sufficient to carry on life. There are some cells as in the medulla which are very necessary to existence but as a whole the brain is too large. One part may take up the functions of another.

In regard to function, the lecturer declared that the productive functions were most wasteful, that is, it is provided most with factors of safety while the animal system has the least. The organs which are less well differentiated, like the internal secretions, are provided with a larger surplus. He concludes that the living organism is provided in its structures with factors of safety at least as abundantly as any human-made machine.

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#### TOO MUCH OR TOO LITTLE FOOD.

Reasoning on the same lines Dr. Meltzer takes a sharp issue with Dr. Chittenden and his pupils who insist that the body is in a better condition on a minimal diet, especially of proteids. The same principle of affluence which controls the entire construction of the animal for the safety of its life and the perpetuation of its species should govern the supply of tissue and energy through the food supply. The body should receive an abundance of food, a constant excess is not only wise but necessary if the body should make the best resistance under diverse conditions.

The reasoning of Dr. Meltzer will appeal to the practicing physician, and while it is true that most people eat too much, the individual in the end is so much more likely to overcome disease and death when the food supply is in excess. Of course there is a maximum limit beyond which the intake of food is harmful, but clinical experience abundantly demonstrates the expediency of good nutrition.

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#### THE PROPHYLAXIS OF THE VENEREAL DISEASES.

This subject continues to engage the attention of the leading genito-urinary surgeons. After all, education does not accomplish all that one might expect, most young men know that they are very likely to become diseased if they flirt with Venus, but so many take chances as in all the conditions of life. The Americans especially "take chances" in venereal disease as well as railroad transportation. Nothing but a clean heart and an earnest desire to resist evil influences can

avail. Instilling a desire for holy things into the mind of the youth and a fear of all that is unclean should be the highest aim of every parent. Temptations will come and the youth who had a Christian mother may be very thankful. The flippant way in which the vices of youth are regarded by many young men is one of the worst foes of the clean life and of venereal prophylaxis. The young man who from experience has reached the conclusion that an attack of gonorrhea is no worse than a bad cold is a bad teacher among his fellow men. It is this influence that the sanitarian has not yet in any way prevented.

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### THE NATURE OF COLLOIDS.

Now and then some scientist throws some interesting figures on the screen and entertains us with a lecture of theoretical principles. Most commonly the physician's work is practical enough. How Johnny Jones lacerated the skin of his finger with a rusty nail and escaped tetanus, has a humanitarian aspect that is always interesting. Hence the report of interesting cases told in an interesting way possesses a marvelous fascination. The report of cases which is taken up entirely with a record of physiological phenomena having little relation to the problem at hand is not read. After all the discussion of generalities are more instructive than the tabulation of single symptoms.

This introduction is probably foreign to the subject, but it explains why some general topic on basic principle, like "The Nature of Colloids," (*N. York Medical Journal*, April 6) possesses a fascination for the average physicians. It is a new comparison of protoplasm and its study from a different standpoint. Protoplasm is indeed the colloid of colloids, but it does not follow that a study of the metallic colloids will assist us very much in discovering the origin of life. True, there are many astounding analogies, but only the too zealous mind could find anything but a superficial re-semblance between the colloid and living protoplasm.

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### ROSENBACH.

Thorough equipment in the practical application of scientific medicine is unfortunately not all that is required to make the successful physician. There is on the one hand the physician who attempts to unravel every little feature of the disease and complete his diagnosis. The practical physician sees his patients get well without making more than a provisional diagnosis. One pronounces the disease hopelessly incurable, the other by inspiring hope and confidence aids in extending life indefinitely. The study of the disease is not the

only duty of the practitioner: he must also satisfy the patient's mind. It is this policy, convincing the patient of the truth of your conclusions that is the principal asset in practice.

This same principle, this antagonism between the practical and the theoretical appears in so many forms that it is scarcely necessary to amplify these expressions. In reading that interesting volume the "Physician *versus* Bacteriologist" (Rosenbach) this thought is forcibly brought out. Yet this writer was so one-sided, so wrapped in the dignity of the profession that he often failed to recognize a scientific explanation. He insisted, for example, that the contagiousness of influenza was not proven. The recent death of Dr. Rosenbach recalls his splendid work in placing the physician above the bacteriologist, that is the practitioner above the scientist. His general laws must always be considered in studying disease, though some of them are obviously erroneous. "The everchanging predisposition of the single individual and of communities of whole nations plays the principal part in epidemic diseases." This law embodies the basic principal of natural resistance and the power to heal. Prove that the natural resistance is very much increased by osteopathic or hydropathic methods, or Christian Science and all means of healing become rational.

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### TOXEMIA.

The word toxemia signifying the presence of some toxin in the blood is very much abused. We see the expressions of "symptoms of toxemia," "signs of toxemia," evidences of toxemia constantly used without any definite evidence that a toxin was really present. There are some (Diller) who desire to make an unproved toxemia the principal underlying factor in the production of neurasthenia, hysteria and delirium. But it is only an hypothesis. The term antointoxication, we find, is gradually yielding to the word toxemia. There is nothing to be gained by the expression.

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### THE BACTERIA IN WHOOPING COUGH.

The etiological agent of whooping cough seems to be a very elusive microorganism. We must admit that we are very much confused on the subject, especially since Joehman insists that the influenza bacillus has a causal relationship to whooping cough. In an epidemic of whooping cough this organism was constantly found in the sputum of cases of pertussis. In this country Wollstein and Davis have made similar discoveries. Where are we? Is the pertussoid following influenza really pertussis? Is whooping cough merely a stage or type



of influenzal infection? Do we really know anything about the subject? Has the influenza bacillus really been discovered?

So the work goes on and meanwhile the practitioner must look on and wonder where it all will end.

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## CURRENT EDITORIAL TOPICS.

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### CARDIOSPASM.

Sippy, writing editorially, (SURGERY, GYNECOLOGY AND OBSTETRICS,) recalls some anatomic and physiologic features of the esophagus and says that for many years a difficulty in swallowing, and even obstruction to the bougie, could arise from spasmodic contraction of the muscle of the esophagus. To quote:

"The work of Meltzer, Rumpel, Mikulicz, Rosenheim, and others has developed a more or less accurate knowledge of the condition, and we are now able to recognize a relatively new, and oftentimes extremely serious, clinical and anatomical picture, caused by spasm or heightened contraction of the lower orifice of the œsophagus. The condition is termed cardiospasm. Spasmodic contraction of the œsophageal muscle may take place at any point in the œsophagus. Serious difficulty in swallowing does not arise, however, except when the spasm is located at the pharyngeal or cardiac orifices. Spasm at the pharyngeal orifice seldom causes prolonged symptoms. Spasm at the cardiac orifice may likewise be transient. Not infrequently, however, the spasm is more persistent, causing obstruction and actual retention of food in the œsophagus.

Proportionate to the retention, dilatation of the œsophagus, fusiform in shape, arises, accompanied by compensatory hypertrophy of its muscle fibers. The capacity of the normal œsophagus is about 100 c.c. The capacity of the œsophagus dilated from cardiospasm varies, in the cases thus far reported, from 150 to 180 c.c. The usual capacity in a well-developed case varies from 250 to 500 c.c.

The clinical symptoms are definite, and should be readily recognized. The condition is more likely to develop in individuals of nervous temperament. The onset of symptoms may be sudden, following mental or physical shock, or some infectious disease, as pneumonia. In other cases the onset is gradual and without apparent cause."

Pain behind the sternum is liable to appear at meal-time. A sense of fulness is present. Upon attempting to eat rapidly regurgitation is likely to take place. "This is frequently mistaken for vomiting, but nausea is rarely present, and upon inspection typical œsopha-

geal regurgitation should be recognized. The obstruction is rarely sufficient at first to interfere seriously with nutrition. The patient learns to force the food through the constricted area by crowding more food and liquids into the œsophagus, swallowing frequently, taking a deep breath, or throwing the shoulders back, or adopting some other movements, such as those used in rowing. Frequently it will be possible to aspirate from the œsophagus from 100 to 400 c.c. of liquid, containing food particles taken several hours before. An abundant quantity of glairy mucus is always present.

There may be little or no obstruction to the passage of a bougie. As a rule, however, the stomach-tube or bougie meets with a resistance at the cardiac orifice, which is usually overcome by slight pressure.

The symptoms of obstruction may subside for weeks or months at a time. After dilatation of the œsophagus develops, and becomes fixed in hypertrophy, the symptoms are likely to persist. Unless the condition is recognized and properly treated, sooner or later regurgitation of food becomes a constant symptom, and death from starvation is likely to occur."

Soft, non-irritating foods, sedatives and rest may be all that is necessary for complete cure.

Some surgical means must often be adopted, the best of which is forcible dilatation.

"For this purpose bougies produce little permanent effect, because it is impossible to pass a bougie sufficiently large to produce actual stretching of the cardiac orifice. Cases in which the retention of food has resulted in œsophagitis are made worse by the passage of bougies.

Rosenheim and others have used rubber bags inflated with air or water to produce distention at the seat of spasm. These were more successful, in a measure, but not satisfactory, since the distended bag would dilate at the points of least resistance, i. e., into the stomach or up into the dilated œsophagus, and the degree of pressure exerted at the seat of spasm was unmeasured.

Mikulicz opened the stomach and dilated the cardiac orifice from below by means of instruments. The success obtained by him in four cases has led other operators to follow his example.

The writer has constructed a rubber bag dilator, by means of which it is possible to accomplish any degree of dilatation desired, without the use of an anæsthetic. The degree of dilatation is accurately controlled by means of a cloth sack, which covers the rubber bag. Thus far, nine serious cases have been treated by the bag, with complete relief. The frequency with which the cases have been re-

cognized during the past few years shows that the condition is not rare. Formerly the fatal cases were usually diagnosed carcinoma of the œsophagus."

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### ETHYL CHLORIDE AS AN ANESTHETIC.

"The selection of a satisfactory anesthetic for short operations is often troublesome," says the *New York Medical Journal* (March 10). The effect of nitrous oxide is too fleeting. Ethyl chlorid does not appear to be as safe. The work of Embly is recalled, who presented a study of the pharmacology of ethyl chloride to the Royal Society.

"Like chloroform, ethyl chloride paralyzes the heart muscle; but it requires nineteen times as much ethyl chloride vapor as chloroform vapor to produce similar results. Like chloroform, ethyl chloride relaxes the arterioles, but the amount required to do it is greater than that of chloroform. Ethyl chloride stimulates the central vasomotor mechanism. When the vapor is present in the air in the proportion of ten per cent., vagus inhibition of the heart readily occurs, resulting in sudden fall of pressure. When the amount of vapor in the inspired air reaches thirty per cent., the sudden fall of pressure is also due to weakening of the cardiac and arterial musculature. The cardiac inhibition due to ethyl chloride is not so serious as that from chloroform, however, because it appears before the spontaneous excitability of the heart is much depressed. It does not seem possible to arrest the sound heart of a dog permanently under ethyl chloride narcosis by vagus inhibition.

It requires nineteen times as much ethyl chloride as chloroform to produce a given degree of cardiac depression, while it requires only four times as much to produce cardiac arrest by vagus stimulation; hence inhibition sets in with relative rapidity. Herein lies the comparative safety of ethyl chloride. The cardiac inhibition arises from central stimulation; it is not reflex. There is no evidence of paralysis of vagus endings. In ethyl chloride narcosis the integrity of the respiratory mechanism is dependent upon the maintenance of blood pressure. In the administration of ethyl chloride vapor for anæsthetic purposes the rational method would be to employ a gasometer and to administer less than ten per cent. of the anæsthetic. The solution should not be poured into the instrument between the face piece and the bag, but should be allowed to mingle with the air by being introduced at the end of the bag."

## BLOOD DISEASES AND LIGHT THERAPY.

The *New York Medical Journal* (January 12) pointed out the relationship of the oxidative capacity of the blood under the influence of sunlight. Clinical experience has demonstrated the utility of the use of light energy in the treatment of many blood diseases. To quote from the same journal:

The remarkable results of the x ray treatment of leucæmia obtained by many workers have tempted the former investigators (*Journal of Experimental Medicine*, January 23rd) to learn somewhat of the rationale of these results. They have rejected experimentation on lower animals in their search for more fundamental deductions, maintaining that in this class of work particularly the human being himself can with perfect safety be put under experimental conditions from which tenable conclusions can better be drawn than from work with lower animals. They have selected patients suffering from leucæmia of the lymphatic and splenomyelogenous varieties, and have directed their attention more particularly to the serum reactions obtained from the blood of patients thus treated. The lymphoid cells are peculiarly reactive to the x rays, and Capps and Smith announce that in the leucocyte there appears a leucolytic substance as a result of the exposure to the x ray. This leucolytic substance, injected into the body of another animal, causes a marked decrease in the number of the leucocytes, particularly of the uninuclear and myelocytic varieties. Such a leucolytic substance was found in largest amounts in the serum of that patient who had best responded to the therapeutic action of the x ray. Phagocytosis was not affected in the studies of Capps and Smith, but they did observe an increase in the agglutinating power of the red blood cells.

What is still more suggestive in the study of these observers is that hypodermic injection of a serum obtained from a leucæmic patient treated by x rays, which serum showed *extra vitam* marked leucolytic and agglutinating properties, produced a marked fall in the number of leucocytes in a patient suffering from a form of leucæmia which had shown itself particularly refractory to the x rays.

Pancoast's study, to which we have also called attention (*New York Medical Journal*, March 23rd, page 558), while more clinical in its character, is of special interest as amplifying our knowledge on this important subject and also as calling attention to the necessity of conservatism and as opening our eyes to certain dangerous elements which should not be overlooked. In his valuable summary of the cases of various forms of leucæmia treated by the x rays, including

some 123 reports, it is noteworthy that, of the sixty-three patients who have been followed, only four, or 6.35 per cent., have remained alive and well for from three to six years after the primary symptomatic cure. All these even are under treatment for relapses following symptomatic cures. In over seventy per cent. of those that have died, or were at the time of his study in a critical condition, there had been a marked improvement of the symptoms or even a symptomatic cure reported. Thirty per cent. of these patients treated did not respond at all to the use of x rays.

One important fact may be obtained from Pancoast's review of the leucemia question. In a large number of the fatal cases of both leucemia and pseudoleucemia the autopsy showed the presence of deep seated lymphoid deposits. As these were manifestly beyond the use of x rays, the application of Capps and Smith's leucolytic serum might render important service, even in view of the gradual immunity developed to the action of the leucolytic serum as brought out in their experiments.

These two recent studies emphatically indicate that a new vista in the pathology of blood conditions has been gained. They both caution us to proceed slowly and conservatively in our therapeutic endeavors, while at the same time building a foundation on which optimism may erect a useful therapeutic structure in the near future.

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### THE GAMETOID THEORY OF CANCER.

At a recent meeting of the Liverpool Medical Institution (*Lancet*, February 16, 1907) C. E. Walker presented a paper on this subject. He explained that as all living matter existed only in the form of cells, all problems of living phenomena must ultimately be cell problems. As all multicellular organisms, whether plants or animals, originated from a single cell (the fertilized ovum), the potentiality of all the cells subsequently produced from it was contained in the fertilized ovum. The author noted that the reduction in the number of chromosomes to one-half of the number found in the cells forming the body tissues, observed as occurring in sexual cells, might be compared with a similar phenomenon occurring in the cells making up malignant growths.

Over ten years ago various observers described the occurrence of division figures in cancer which possessed all the peculiar characteristics of the heterotype divisions; that is, the form of division in which the number of chromosomes was reduced to one-half of the normal number found in the body cells. A diagram was exhibited showing



the results of an indiscriminate counting of the chromosomes in the dividing cells of malignant growths. This diagram when compared with one showing the results of a similar counting of the chromosomes in the cells of a testis proved that the relative proportions of cells containing the full and exactly half the normal numbers of chromosomes was almost identical in malignant growths and in testes. It was shown that "Plimmer's bodies," so frequently described by various authors as being the parasite of cancer, were exactly similar in origin, in mode of development, and in structure to the archoplasmic vesicles found in the spermatids of certain animals, including all mammals, but never in any other normal cells of the body. Thus there was another direct parallel between the cells of malignant growths and those of normal reproductive tissue. Emphasis was laid upon the fact that cells that had entered upon the reproductive phase lived normally as parasites upon the parent organism, and that all such cells, whether in animals or in plants, were out of coordination with the rest of the body. A true fusion between leucocytes and tissue cells was described as being one of the earliest phenomena in the commencement of malignant growths. Reduction in the number of chromosomes to one-half of the somatic (body) number was described as taking place normally among the leucocytes, thus making it probable that certain generations of leucocytes went through a sexual phase.

Basing his views on the foregoing facts, Mr. Walker pointed out that the malignancy of certain tumors might be due to the cells forming there entering upon a sexual phase, and there living as parasites upon the parent organism, as such cells always did. On this supposition it would be necessary to seek the cause or causes which induced this change. This left the leucocytic fusion in the position of a mere coincidence of no material importance. On the other hand, this fusion itself would equally account for the peculiar qualities possessed by the cells of malignant growths. They would necessarily be out of coordination with the parent organism, and would live as parasites upon it. Moreover, that some of them should enter upon the sexual phase was exactly what would be likely to happen. Here it would be necessary to find out under what conditions the fusion between the leucocytes and tissue cells was possible. It might be due to some change in either or both of the two kinds of cells.—*Medical Record*.

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### THE EARLY DIAGNOSIS OF LEAD POISONING.

It seems that lead poisoning has lost some clinical interest in recent years since the cases are less numerous owing to greater preventive

care taken by those who work in lead. Yet its occurrence must be constantly kept in mind and the diagnostic signs sought in all suspicious cases. The *Medical Record* (March 9) editorially discusses the early diagnosis of lead poisoning:

"While lead poisoning in its more advanced stages is ordinarily accompanied by so characteristic a symptom complex as to make its diagnosis a matter of no very great difficulty, in early cases the conditions may be extremely hard to recognize. One of the most reliable evidences of plumbism, the detection of the metal in the urine, is unfortunately scarcely within the scope of the practitioner's laboratory, owing to the somewhat complicated and very time-consuming chemical manipulations it requires. Even in skilled hands negative results are common, and Frey (*Deutsche medizinische Wochenschrift*, February 7, 1907) states that Seiffert in the course of seventy-three analyses of the urine of tin refiners exhibiting the most varied symptoms of intoxication discovered lead in only 15.6 per cent. The chemical investigation of the urine therefore does not furnish a satisfactory means of diagnosis for mild or early cases. The granular degeneration of the red blood cells described by Grawitz some years ago seems to be of greater assistance, however. It consists in the presence in certain of the red blood corpuscles of minute particles having a strong affinity for basophilic dyes, so that in a blood preparation stained with one of the methylene blue solutions the cells in question present varying numbers of minute bluish points. Frey, also working among tin miners and refiners, arrived at the conclusion that in this peculiarity of the erythrocytes a most useful diagnostic indication of incipient blood poisoning was to be found. The other conditions in which it is likely to occur, such as cancer, pernicious anemia, intestinal putrefaction, and sepsis, can usually be excluded without difficulty, but the possibility of their occurrence must be kept in mind. The value of routine blood examinations with this appearance in view is very great, as in this way individuals may be excluded from the more dangerous forms of work until the disappearance of the basophilic granulation indicates that for the time being the danger of lead poisoning is over. As the granules in the red cells usually appear before the other symptoms have become characteristic, if the blood of those engaged in occupations that involve danger of plumbism is watched carefully the severer forms of intoxication can very often be forestalled. There is also another and very useful application of this discovery in that by frequent blood examinations one may very accurately estimate the degree of success of any therapeutic measures that may have been instituted."

## ACUTE CARDIAC DILATATION.

The other day a colleague died suddenly in his prime of "heart failure" during an attack of grippe. A patient was doing so well after his pneumonia that his physician permitted him to sit up in bed and play at cards with his wife to while the time away; the patient suddenly fell back upon his pillow and presently expired. The case of a little child, convalescent after diphtheria, terminated in like manner while it was engaged with its toys upon the floor. Such patients have collapsed even while straining at stool. Deaths from acute cardiac dilatation, during or after acute infectious diseases, are being reported with disconcerting frequency, and counsel is by no means amiss, that there should be freedom from excitement, anxiety and strain, and against the too early resumption of active life by such patients.

In many infections—acute rheumatism, diphtheria, scarlet fever, influenza, pneumonia, endo- or peri-carditis, typhus, typhoid, erysipelas and the like—the myocardium may be seriously affected by the action of the various toxins upon it; wherefore a relaxation of muscular tissues, a loss of tone in them, or a parenchymatous degeneration must be feared and carefully taken into account. Cardiac dilatation must be particularly guarded against when the temperature changes have been marked and prolonged.

Beside the toxic element the dilatation is also due to heightened blood pressure, especially within the right cavities, and to the impaired resistance which must generally follow. In pneumonia, where the pulmonary obstruction is great, the right ventricle cannot empty itself during the systole; and regurgitation into the auricle is inevitable, so that that chamber becomes distended in its turn. Nor can the left heart perform properly its functions, by reason that its chambers contain, instead of the usual amount of blood, so little that the normal systole and diastole are not excited. Another factor, quite independently of these two, may be a paralysis of the cardiac plexus, which obtains especially in diphtheria.

What signs should we observe in guarding against acute cardiac dilatation? A weak, failing, rapid, intermittent pulse, dyspnea, cyanosis of lips and finger tips, a dusky or ashen or grayhued skin, epigastric pulsation, pain about the precordium, increased cardiac dullness, especially to the right of the median line, and distention of the cervical veins.

What may be done under these grave circumstances? The patient must lie prone; leeches or wet cups or ice bags should be applied to the precordium; venesection is appropriate in these desperate cases;

strophanthus *per os* with brandy or ammonia, or by hypodermic; oxygen should always be at hand; camphor and ether (one part in eight) should be prepared for injection. The nitrites should be employed, to the excellent end that the patient may be bled "from the veins to the arteries"; glonoin in drop doses every fifteen minutes. Beverly Robinson, in a very wise paper, finds that the dreadful lassitude generally following upon grippe is due to the dilated heart, and he deals comprehensively with this condition not only with regard to the infections, but also as it is due to nervous origin or to irregular modes of life. We may find cardiac dilatation not only as a lesion of the diseases here stated, but also as the result of chronic endocarditis, of renal diseases, of arteriosclerosis, of arduous and continuous work (as among the laboring classes), of frequent heavy strain (as in athletes), in late syphilis or chronic alcoholism, of anemia, leukemia, chlorosis, goitre, angina pectoris, paroxysmal tachycardia, a mitral stenosis, emphysema, an old myocarditis and after profound emotional disturbances.—*Bost. Med. and Surg. Jour.*

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### INSANITY AND THE LAW COURTS.

It must be discouraging to mental nosographers to discover, after devoting several decades to the laborious study of insanity in large institutions, that types of mental alienation exist, which they never dreamed of incorporating in the printed volumes representing the fruits of their industry and learning. Out of the growing list of these ordinarily unappreciated insanities, we select only two for comment: the "amnesic" and the "brain storm" varieties, and refrain from going farther than the mere mention of the "senile dementias" so common to testators with large fortunes to dispose of.

Before proceeding with our theme, we wish to say a word in excuse of those learned colleagues, both in this country and abroad, whose written opinions, in the form of textbooks, convict them of the crassest sort of ignorance with regard to the two particular forms of insanity we have chosen to discuss. Our main argument in their defence lies in the fact that these forms of insanity, of which they are so palpably ignorant, appear to afflict persons of the highest social standing and are manifest only at the time when what is carelessly spoken of as a crime is committed by them, and they are called to an accounting before the courts. The only place, then, that these forms of insanity may be properly observed is in the criminal courts, and any one at all familiar with the multifarious duties of the alienist who presides over a large hospital knows that he has no time to go ferreting out

types of mental alienation in such uncongenial places. We are positive that other extenuating circumstances could be put forward, but we consider the one cited abundantly sufficient.

As we understand amnesic insanity—and we do not for a moment wish to be considered as flaunting our knowledge in the faces of the writers of textbooks on mental disease—it has one peculiarity that is absolutely pathognomonic. The amnesia must cover a certain (legally) important period prior to and following the commission of the crime and must embrace every possible incriminating circumstance connected therewith, down to the finest possible detail. There are two well-known varieties of amnesic insanity,—the epileptic and the alcoholic. If the gentleman temporarily detained as a delinquent committed the criminal act, murder or what not, while in a drunken brawl, it is a case of alcoholic amnesic insanity. If it can be shown that he happened to have a convulsion while teething, it is the epileptic variety.

The "brain storm" variety may occur in a pure and independent form, or it may complicate the amnesic. It is the type most commonly observed among gentlemen murderers, and is marked by the "rolling eye" and, at the moment of committing some deed of violence, by such coprolalic utterances as *blackguard*, *beast*, and so forth. The "storm" is of brief duration, covering only the time of the murder and the first one or two visits of the alienist sent by the defence subsequent to this event. A striking feature of this peculiar malady is that, although the lunatic talks openly of his intended crime for months prior to the unlawful act and carries upon his person deadly weapons, with which to carry out his criminal intention, nobody ever suspects for a moment that he is insane.

Whereas this "brain storm" form of insanity appears to be peculiar to murderers, the amnesic forms are most commonly observed among financiers and persons having large trust funds within their control, and it would seem that the widow and the orphan, whose money has been irrevocably dissipated by reason of the mental imbalance of these unfortunates, ought to be more lenient toward them in the future.—*Bost. Med. and Surg. Jour.*



## LEADING ARTICLES

### PARAFFIN—ITS VALUE IN SURGERY.

BY E. A. BABLER, M. D., ST. LOUIS.

Seventy-seven years ago Reichenbach discovered a substance which was not attacked in the cold by such energetic oxidizing agents as concentrated sulphuric and nitric acids, and to which he gave the name paraffin. It is the denomination of a series of saturated or limit hydrocarbons, so-called because they cannot unite with any more atoms or group of atoms. The chemical constitution of the paraffins remains unknown. They are obtained in large quantities in the dry distillation of peat, turf, brown coal, bituminous shale, etc. They are almost, or practically altogether, insoluble in water and cold alcohol, but are soluble in ether, fatty and volatile oils, mineral oils, and boiling alcohol. The commercial products known as vaselin, petrolatum U. S. P., cosmolin, etc., are not pure paraffins. Liquid petrolatum, vaselin and hard paraffin are practically but gradations of the same body, and in fact show much resemblance in their chemical behavior. They are all absolutely neutral, hence are non-irritating.

In 1891 Corning suggested the introduction (and subsequent refrigeration) of solidifying oil into the subcutaneous tissue in order to bring about the occlusion of blood-vessels. Many years thereafter Gersung, while experimenting with melted vaselin, observed that if melted vaselin is injected into the soft tissues of the human body, the embedded mass, after hardening, apparently remains unchanged and stays where it has been deposited. In 1900 Gersung presented his historic monograph entitled "Subcutane Prosthese," thereby opening up a very wide prospective field for the procedure, which was greeted as a revelation.

Gersung suggested paraffin injections in cases of paralysis of the soft palate, of insufficiency of the anal and vesical sphincters, of hernia, of prolapsus uteri: for prevention of ankylosis after resection, the support of an artificial anus, of varicose veins: to fill up bone scars, such as occur after operation for osteomyelitis, etc., but specially in cases of saddle-nose deformity, from fracture or loss of septum by disease.

We naturally ask: What changes occur in the paraffin? Does the paraffin become encapsulated? What are the end results? Gersung said:

"A few hours after injection the conditions are entirely changed. A small cell infiltration sets in; soon the vaselin, like any foreign body, is encapsulated, and the traveling of paraffin globuli cannot occur unless that capsule is ruptured."

Luckett and Horn have found that paraffins of varying melting points, when injected in the same fluid state (after being liquified by heat) distribute themselves in a nearly identical manner in the tissues; paraffins of the same melting point, if injected in different physical states, show entirely different disposition in the tissues. They found that the more solid the paraffin at the time of injection, the more apt it is to be confined to one mass, and the less likely to spread throughout the tissues. Injections into dissimilar tissues of paraffin of the same physical state necessarily present different arrangements, depending upon the amount and resistance of the loose areolar tissue.

What becomes ultimately of the paraffin? Experience has clearly proven the fact that encapsulation occurs. Luckett and Horn agree that the heat of the paraffin, its stimulating effect as a foreign body, the mechanical injury and traumatism, and the chemical irritation of the paraffin necessarily cause the tissues to take on a rather violent aseptic inflammation and to make an attempt to encapsulate, as though each small particle of the paraffin were foreign body. They insist, however, that "the proliferation of new tissue goes on from the already existing fibers that have been encircled by the paraffin at the time of the injection, and that the encapsulation takes place from the inside of the mass as well as from the outside." The final arrangement of the paraffin, as well as the permanence of the prosthesis depend, according to Luckett and Horn, upon the reliability of its anchorage. The softer the paraffin the more likely it is to be absorbed or disappear altogether by oxidation, by phagocytosis or by some biochemical process not quite understood. The harder the paraffin the richer in coal elements; hence the more irritating and less absorbable. The harder the paraffin the less the biochemical action, the more stable and lasting the deposit. Paraffin injected in a melted state will be more uniformly subdivided into small particles, each of which is encapsulated as well as the whole mass itself, than paraffin that is injected in a solid state.

Experience shows that the melting point of the paraffin employed is regulated quite materially by the character of the affection as well as the elasticity of the tissues. By combining hard paraffin and fluid

paraffin in varying proportions it is possible to produce a paraffin of the desired melting point. The melting point is tested by melting the mixture, floating a drop on the surface of a glass of hot water, and noting the temperature of the water when the drop strikes white; then heating up the glass of water and noting the temperature at which the floating drop of paraffin remelts; the mean between the two temperatures, roughly speaking, is the melting point of the paraffin, when the injection is to be made into very dense cicatricial tissue it is advisable to use olive oil for the fluid paraffin.

Many of the unsatisfactory results have been due to improper technic in the preparation of the paraffin as well as to (1) the escape of paraffin after withdrawal of the needle, (2) infection, (3) deformity from overinjection, (4) injection into the skin proper instead of into the subcutaneous tissue, (5) excessive heat of the paraffin and of burns from too hot needle, and (6) failure on the part of the operator to fully appreciate the character of the tissues into which the injection was made.

It has been found that the employment of a paraffin which possesses the property of immediate solidification apparently prevents pulmonary embolus and other distressing accidents which have occurred after paraffin injections. Investigators have found that accidents, although comparatively rare, have occurred in cases where paraffin mixtures with melting points ranging from 90° up to 110° F. have been used; the best measure to avoid the former is the use of paraffin with a melting point above 110° F.

In sixty-four cases treated by Luckett and Horn there were no accidents. The greater portion of these cases were instances of nasal deformity. Their results were quite satisfactory.

From a review of the literature it would seem that paraffin when properly employed and in skilled hands is a valuable agent in surgery. Much remains, however, to be perfected. The few distressing accidents which have followed its use have tended to cause us to limit its field of employment. It is quite probable that as soon as the profession becomes appreciative of its usefulness, and the technic has been made more satisfactory, the agent will be more extensively employed, and with better results.

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## THE QUESTION OF EARLY OPERATION IN CASES OF INTRACRANIAL INJURY.

BY M. GEO. GORIN, M. D., ST. LOUIS.

It is the duty of every surgeon who treats such injuries to weigh

carefully the testimony of competent observers of this extremely difficult problem. The correct decision of this vital question frequently taxes the judgment of the surgeon to the utmost. Especially is this true in hospitals of public service where most frequently such cases are brought in unconscious and only such meagre testimony as is usually obtained from the casual bystander is to be had. Dr. Charles Phelps in a recent number of the *Annals of Surgery* presents several practical conclusions drawn from a study of 200 cases of Intracranial Injury, from which the following is abstracted. In the majority of cases the symptom of unconsciousness is a diagnostic sign of the greatest value taken in connection with the early history. In conjunction with this and of equal import is the temperature:

The loss of consciousness, which immediately succeeds a cephalic injury, is always the result of diffuse cerebral contusion; if unconsciousness is preceded by a conscious interval, however brief, or if after restoration of consciousness its privation soon recurs, it is occasioned by some form of intracranial hæmorrhage. If, however, primary unconsciousness is permanent or greatly prolonged, its continuance may be due either to the severity of cerebral lesion or to a complicating hæmorrhage; and whether the one has persisted from the beginning or been at any time replaced by the other, or whether both exist together, can be determined, if at all, only by a study of all the symptoms presented. The pulse, temperature, and respiration must be systematically recorded in every case from the first opportunity afforded for observation until the end. . . . of these, the temperature in its course and variations will afford in the greater number of cases the most distinctive indication of the nature of the lesion. . . . If, then, after the lapse of hours consciousness still remains in abeyance, a stationary temperature, but one or two degrees above the normal standard, will indicate a hæmorrhage of some profusion without serious cerebral injury; but a higher elevation which constantly increases, with possible recessions, will point to a visceral lesion. . . . The cases in which consciousness after brief restoration is again lost permanently, or for a lengthened period, have the same relations to temperature as those in which unconsciousness has been uninterrupted. It will be recalled that the recurrence of unconsciousness after an early interval of sensibility is indicative of an increase or supervention of hæmorrhage, and that at a later period more or less conscious intervals in a general unconscious condition result from a lessening from time to time of the hyperæmia or œdema of a diffuse cerebral contusion. The question of hæmorrhage should scarcely arise in the last instance, but the temperature still conforms to the general rule.

When as sometimes happens two or more lesions of almost equal importance exist with many symptoms in common and others ill defined an exact diagnosis will be impossible. Then the surgeon may ask himself

What an operation may be expected to accomplish?

Is it practicable?

Will it improve the patient's chances of recovery?

In this connection the question of whether the lesion is epidural or subdural is of paramount importance. The epidural lesion involves a minimum danger and accomplishes a definite object. The subdural lesions on the other hand are frequently inaccessible and operative measures are always dangerous and of doubtful expediency. When an operation has been deemed advisable in epidural hæmorrhage there should be no unnecessary delay after reaction has been established. If coma deepens, temperature falls, and the pulse declines it is not advisable to wait even for reaction, for it is proof that hæmorrhage still continues and the only hope of saving the patient is in reaching and checking the hæmorrhage at its source. To sum up:

1. Epidural hæmorrhage demands operation in such cases as do not obviously tend to spontaneous recovery, or in which a fatal issue is so imminent as to permit of no question.

2. Meningeal contusion, when productive of symptoms, either cannot be diagnosticated from an epidural hæmorrhage or its indistinguishable from the diffuse cerebral oedema with which it is always associated. A recognized intracranial hæmorrhage may be expected to be of pial origin when associated with cerebral lesions, and will indicate operation when the cerebral lesion is regarded of minor importance.

3. Cerebral contusions (a) Limited—no tendency to fatal termination, and never suggests operation (b) Diffuse—two classes of cases; in one, a vascular disturbance incapable of self limitation, not markedly involving the integrity of the cerebral cells, but tending to destroy mechanically their function; in the other a progressive disintegration of cellular structure, an active process, due to chemical changes, which natural forces prove insufficient to restrain. In the first operation is theoretically indicated; in the second, in view of the origin and nature of the pathic changes, there is no reason to suppose a simple relief of pressure will stay their progress. In neither is it possible to fix the time when operation may so supplement natural forces and simpler remedial measures as to increase the patient's chances of recovery.

4. Mixed cases—cerebral contusion complicated with pial or epi-



dural hemorrhage. Operation should depend upon the estimated relative importance of the lesions; and the correctness of this estimate must depend upon the acumen and experience of the surgeon.

## THE THERAPEUTICS OF THE NATIONAL FORMULARY.

### IV.

#### GENITOURINARY DISEASES.

The National Formulary abundantly provides medicinal solutions and mixtures which may be used to treat diseases of the genital and urinary organs. In fact, it would seem that there is a great demand for such medicinal agents. The variety of the preparations argue for a diversity of opinion as to the best mode of treatment, but nearly all have stood the test of time and can be safely prescribed.

#### CHANCROID.

In many cases the general health of the patient is impaired and a general tonic is very helpful. The elixir cinchonæ et hypophosphites can be prescribed for this condition. Two teaspoonfuls, well diluted, should be given three times a day. The ulceration can be disinfected thoroughly by applying phenol iodatum, after which the following powder may be ordered.

R

Pulv. iodoformi compositi, N. F.

Sig. Use locally.

This powder contains iodoform, boric acid, naphthalene and oil of bergamot. The odor of iodoform is masked both by the oil of bergamot and by the naphthalene.

The older surgeons used with great success yellow wash and black wash on some of these cases.

R

Lotion. flavæ.

or Lotion. nigrae.

Sig. Use externally.

#### GONORRHOEA.

This infectious disease, like many others, runs a definite course, although this course, no doubt, may be somewhat modified by treatment. A very bland diet should be prescribed. Rest is very necessary. At the outset a mixture to render the urine alkaline is helpful.

R

Fluid extr. zeae, N. F. .... 3 i.

Elixir buchu et potas. acetat, N. F. .... 3 iii.

M. sig. Teaspoonful in a half glass of water every three hours.

Perhaps, the buchu may be too stimulating, when the elixir of potassium acetate may be prescribed in tablespoonful doses. If distressing chordae occurs, the following will give relief:

R

Elixir humuli, N. F.

Elixir sodii bromidi, N. F., aa. .... 3 ii.

M. Sig. Teaspoonful every three hours.

If a severe balanitis complicates the disease and causes suffering, applications of the lotio plumbi et opii may be made. Frequently it is advisable to dust some antiseptic powder under the foreskin, and for this purpose the pulvis iodoformi compositus may be prescribed.

Injections, in spite of their advantages, are very popular. Few physicians would have the courage to treat a case of gonorrhœa without prescribing some solution for injection. Let the theorists discuss its mode of action, in the end benefit accrues in most cases and the practical physician wants results.

Potassium permanganate still retains its place as a valuable antiseptic to be used for this purpose in the strength of 1 to 1000. Zinc sulphate was formerly used to a great extent in a strength of one-half to one per cent. We imagine that the pulvis antisepticus, N. F., a soluble antiseptic powder, might be used with great satisfaction as an injection in gonorrhœa. Its principal constituent is boric acid. Sulphate of zinc forms about 12 per cent. of the whole. It also contains one-half per cent. of salicylic acid, and minute quantities of carbolic acid, eucalyptol, menthol and thymol. We suggest the following:

R

Pulvis antiseptici, N. F. .... 3 iss.

Aquae ..... 3 viii.

M. Sig. Use as directed.

This is a safe and harmless injection and can be used in the early stages of the disease to cleanse the urethra.

When the acute symptoms subside it is customary to prescribe protargol, nargol or argyrol in various strengths. Silver nitrate on account of its irritating effect is less frequently prescribed at present.

Internally, there is nothing superior to copaiba although the manufacturing chemists have for years been trying to substitute something else.

R

Misturæ copaibae, N. F. .... 3 vi.

Sig. Dessertspoonful three times a day.

This mixture contains about 7½ minims of copaiba to each fluidrachm. It also contains the same amount of sweet spirits of nitre. It is usually known as the Fafayette mixture and probably this name should be added to your prescription. The National Formulary also gives the ingredients of Chapman's Mixture which contains opium in addition and can be used when much pain accompanies the act of micturition.

R

Misturæ copaibae, N. F. .... 3 vi.  
(Chapman)

Sig. Teaspoonful every four hours.

Each fluidrachm contains about 2 minims of the tincture of opium.

## CYSTITIS.

As is well known, cystitis is a common complication or sequel of gonorrhœa, but it more often depends on other causes, e. g., an infection by the colon bacillus. It is not uncommon in infants and children, especially in girls. In the young it usually shows itself by a marked febrile movement, in fact, this may be the only prominent symptom present and give rise to all kinds of erroneous diagnoses. The finding of pus in the urine with a minimum amount of albumin corroborates the diagnosis. In this colicystitis diuretics are exceedingly valuable in that the bacteria and their products are promptly removed from the urinary tract. There is, therefore, a marked amelioration of the symptoms when the urinary flow is increased.

R

Elixir potas, acetatis et juniperi, N. F. .... 3 ii.

Sig. One-half teaspoonful well diluted every three hours to an infant.

While hexamethylenamine is probably the most effective remedy in colicystitis, it is sometimes necessary to prescribe the cinchona alkaloids for a similar purpose.

R

Syrupi quinidinae, N. F. .... 3 ii.

Sig. Teaspoonful three times a day.

When the acute symptoms subside and pus remains in the urine for an indefinite period the following may be prescribed:

R

Elixir potas, acetatis et juniperi, N. F. .... 3 ii.

Sig. One-half teaspoonful three times a day.

This preparation may also be prescribed with benefit in the colicystitis of women, also in the chronic cystitis of men due to prostatic hypertrophy. In these latter cases a combination of drugs is often more effectual in producing an amelioration of the condition.

R

Elixir buchu compositi ..... ̄ iii.

Sig. Teaspoonful every four hours, well diluted.

This preparation contains buchu, cubeb, juniper and uva ursi. It is indicated in all chronic varieties of cystitis and pyelitis, but of course can not be expected to cure the tuberculous forms of the disease. Naturally, these urogenitals should not be prescribed when the kidneys themselves are in a state of inflammation.

Encalyptus, also, is often given for the chronic catarrh of the bladder.

R

Elixir eucalypti, N. F.

Elixir buchu, aa ..... ̄ ii.

Sig. Teaspoonful every four hours.

When pain and distress accompanies micturition, seven barks may be added to any of these prescriptions.

R

Fluidextr. hydrangeae, N. F. .... ̄ i.

Elixir potas. acetatis et juniperi, N. F. .... ̄ iv.

M. Sig. Teaspoonful in water every three hours.

It is often necessary to add codein or morphin to various urogenitals, especially in the acute forms of inflammation.

R

Codein phosphat ..... gr ii.

Fluidextr. tritici ..... ̄ i.

Fluidextr. zeae, N. F. .... ̄ i.

Elixir aromatic, q. s. od. .... ̄ iii.

M. Sig. Teaspoonful every three hours for acute cystitis.

#### SPERMATORRHEA.

There is not much found in the ordinary text-books on that functional derangement of the sexual functions commonly grouped under the term spermatorrhea. We are not sure that any great scientific studies have been made of this subject. Such studies are from the very nature of the subject very imperfect. There can be no doubt, however, that the disorder is usually harmless or at least only temporarily harmful. Some youths need only advice, others some directions as to sleep and diet, still others need some medication.

If anemia and debility are present, tonics are indicated:

R

Liquor sodii arsenatis, N. F. .... mlxx.

Liquor ferri peptonati cum mangano, N. F. .... ʒ vi.

M. Sig. Dessertspoonful after meals.

If iron does not seem to be needed but a good nerve tonic is indicated the following should be prescribed:

R

Liquor auri et arseni bromidi, N. F. .... ʒ ss.

Sig. Five drops in water after meals.

In young healthy, full blooded individuals nerve sedatives will be very beneficial in addition to hard outdoor work and plenty of sound sleep.

R

Elixir sodii bromidi, N. F.

Elixir humuli, N. F., aa. .... ʒ ii.

M. Sig. Dessertspoonful at bed time.

In addition a good purgative should be given every other day on retiring at night. We would suggest the pilula colocynthis et hyoseyami of the National Formulary.

#### IMPOTENCY.

Excluding those forms depending upon disease or malformation of the genital organs, impotency has been divided into three forms,—psychical, irritable and paralytic. The first variety is best treated by suggestions and other forms of mental therapeutics. In the irritable form, total abstinence for a period, and the administration of some tonic to the nervous system will be found valuable.

R

Liquor auri et arseni bromidi, N. F. .... ʒ ss.

Sig. Five drops in water before meals.

or

R

Pilul. quadruplices, N. F. .... no xxx.

Sig. One three times a day.

The paralytic form is not usually amenable to treatment except as the original disease may be remedial. But there are many forms of functional impotency depending upon a weakened or relaxed condition of the sexual apparatus which may be cured by the internal administration of drugs. It is very rarely necessary to prescribe the so called aphrodisiacs. The National Formulary provides one or two of these drugs. The following may be used when such a drug is indicated:



R

Tincturæ nucis vomicæ.

Elixir turneræ, N. F., q. s. od. .... 3 iii.

M. Sig. Teaspoonful three times a day.

Cannabis indica may be added to this prescription. Camphor is sometimes successfully used. Ergot increases the general tone of the vasomotor apparatus and can be combined with nux vomica and cannabis indica.

R

Fluidextr. turneræ, N. F. .... 3 vi.

Tinct. nucis vomicæ ..... 3 ss.

Fluidextr. ergotæ ..... 3 ss.

Elixir aromatic, q. s. od. .... 3 iii.

M. Sig. Teaspoonful three times a day.

## THE KIDNEYS.

In inflammatory conditions of the kidney hydrotherapy holds a high place. Most acute inflammations as in other organs of the body, are self-limited and will mostly get well, meanwhile the kidney should be relieved of as much work as possible. This is accomplished by diminishing the ingestion of those foods which form as end-products in the body either salts (sodium chlorid) or urea. Hence the proteid in the foods must be given in minimal quantities and salt as much as possible be left out of the daily food. It is sometimes necessary to feed the patient on whey instead of whole milk. Fruits, except those containing oxalic acid, are permissible. Plenty of water should be prescribed. In order to relieve the work of the kidneys, cathartics are very helpful. Calomel or other mercurial should not be given in the acute forms of nephritis. On account of their being excreted by the bowel exclusively, the magnesium salts are to be preferred.

R

Liquor magnesiæ sulphatis effervescentis, N. F.

—One bottle—

Sig. Take the contents of one bottle.

This is a very pleasant preparation of the disagreeable magnesium salt. In place of this, the effervescent magnesium-sulphate of the pharmacopœia may be prescribed.

In order to induce sweating, hot packs are indicated. Before giving the pack the administration of a sudorific will aid the sweating process very materially:

R

Elixir pilocarp. N. F. .... 3 ii.

Sig. Teaspoonful immediately before the hot bath.

Occasionally it is wise to stimulate the kidneys to increased activity. Some non-irritating drug must be given. Juniper is occasionally permissible and may be prescribed with an alkaline diuretic:

R

Elixir potas. acetatis et juniperi, N. F.

Sig. Tablespoonful several times a day.

Lithium has quite a strong reputation in various affections of the kidney and may conveniently be prescribed in the form of the elixir of lithium citrate, each fluidrachm of which contains five grains of lithium citrate. Or a combination may be ordered.

R

Fluidextr. zeae, N. F. .... 3 i.

Elixir lithiæ citratis, N. F. .... 3 ii.

M. Sig. Teaspoonful in a glass of water three times a day.

## THE DIRECT CAUSATION OF TYPHOID PHENOMENA.

BY WILLIAM F. WAUGH, M. D., CHICAGO.

Editor St. Louis Courier of Medicine:

In the current issue of your journal, page 131, you make some statements regarding typhoid fever which as they bear directly upon its treatment seem too important to be allowed to go without discussion. I beg leave to direct your attention to the following considerations, and if I am incorrect in my reasoning or mistaken as to my facts will gladly listen to instructions. You intimate that the discovery of typhoid bacilli in the circulation of every case at some period of its course and the reinvasion of the blood coincident with relapses relegates the use of intestinal antiseptics to the background. Do you then claim that all the phenomena of this malady are to be ascribed directly to the presence of these organisms in the blood? If so, will you kindly point out to us the proof of this, as it has totally escaped a rather diligent search.

Is the severity of an infectious attack in no way dependent on the number of the invaders? We believe that bacteriologists without exception assert that it requires a large number, several billions in fact, to overcome the resistance of the body and determine an attack of the disease. If so, any measure that may cut off a large part of the invaders should lessen the severity of the attack.

Do you hold with Osler that constipation in typhoid fever is rather favorable than otherwise?

That we may see wherein we differ, if we do, allow me to define the position held by those who advocate the use of intestinal antiseptics.

ties in typhoid fever. We have long been aware that even in the incubative stage of this malady the characteristic bacilli are to be found in the blood of the patient; also that complete asepsis of the alimentary canal is an impossibility. Taking up the latter point we reply that complete asepsis of the skin is also impossible, or of a wound, and that all the surgeon can accomplish in that direction is to secure an approximation to the ideal. But on that is built modern surgery, and as the surgeon would not desert his attempts at antiseptis or asepsis because of their imperfection so we may attain such a degree of it as we can, with advantage. The infection of typhoid takes place through the alimentary canal in most cases; the heat with moisture and abundance of putrescible material, with the checking of secretion of the digestive fluids removing nature's antiseptis, render microbial growth luxuriant during fevers. The presence of pathogenic microbes, and the increased virulence they attain increase the danger. The increased radiation of water from the skin, and the paralysis of peristalsis unite to reverse the ordinary osmosis from the bowel and we have a flow from the large intestine to the blood instead of *vice versa*. The toxic contents of the bowel are absorbed into the circulation and to their presence is directly due a part of the symptoms witnessed during the course of a typhoid attack. We assume—is it denied?—that the typhoid bacilli propagate and multiply in the bowel, and we believe that by clearing the bowel and disinfecting it we are cutting off a portion at least of the reinforcements that joining the original invaders would aid to the gravity of the attack. Whether the remedies act by simply killing the microbes, by interfering with some of their functions, by neutralizing their toxins or preventing their absorption, we are not prepared to say. Our difficulty lies in explaining the manner in which the beneficial effects are induced—as to the fact of benefit, and of its importance, few if any who give the method a trial will be found to doubt. It is not merely a checking of diarrhea and flatulence but a uniform and decided fall in the fever, delirium, debility, anorexia, aching; in fact the sum total of the symptoms is diminished by about one-third when the bowels have been emptied and disinfecting. Make such hypothetic explanation of the facts as you will, the facts remain.

So sure is the result that its failure to appear may be taken for proof that the conditions have not been fulfilled. Permit me to quote from a recent article an illustrative case: A physician reported that he was giving the pure sulphocarbolates, ten grains every two hours, to a thirteen-year old girl with typhoid fever, but despite preliminary doses of calomel followed by saline, and a colonic flush, the tempera-

ture remained above 104 F. The hygienic environment was as bad as it could be, the house situated in a yard inhabited by numerous pigs and cattle, draining into a shallow well from which all the drinking water was drawn. Nevertheless, there is a certain habituation that comes from bad hygienic surroundings, and I doubted that this accounted for all the severity of the case, and directed my friend's attention again to the colon. He now writes as follows: "The case has shown a wonderful change since giving an enema of a pint of kerosene, through a soft rubber catheter passed into the colon, getting away an enormous mass of dark, foul-smelling fecal matter. The temperature was only 99.4 F. yesterday at 4 p. m., she was resting quietly and the delirium almost gone."

When the results of any remedial measure are so uniform and positive that their failure to appear is evidence that the conditions on which its employment was based were erroneous, we may well ask if this is not getting therapeutics down to some degree of certainty.

I am well aware that a ponderous weight of authority may be adduced against this theory. I have borne up under the weight of this authority for the 25 years during which I have steadily advocated intestinal antisepsis. Not arrogantly, for no man is more aware of his own limited qualifications and knowledge, but there is one supreme authority for every man, and that is the testimony of his own senses as illuminated by his knowledge and reason. The man who does not finally decide his beliefs and practice by these is but a slave after all. But today it is difficult to decide on which side the preponderance of authority is to be found, since the doctrine is receiving all but universal adhesion. As Von Noorden says: "At first we German Physicians were by no means inclined to accept the theory of autointoxication that was being so enthusiastically proclaimed. Of late years, however, our attitude has become more friendly to the doctrine." Examination of current medical literature will show that this doctrine is becoming part of the subconscious thought of the profession.

\* \* \* \* \*

We do not hold that all the phenomena of typhoid fever are caused by the invasion of the typhoid bacillus into the circulation. The bacilli are found regularly in Peyer's patches and in the intestinal wall. They have been almost constantly found in the mesenteric glands and the spleen.

"According to the unanimous opinion of numerous investigators, it may be maintained with certainty that the occurrence of bacilli in the intestinal walls, in the lymph nodes belonging to the intestine, and in the spleen is constant and unexceptional condition in all cases of enteric fever."—Klemperer.

The bacilli have also been found in the blood, and, when the Neufeld technic has been used, in nearly all cases, especially has the bacillus been found in the roseolar eruption.—(Curschman, Kraus, etc.) The excretion of the bacilli in large quantities in the urine, at least suggests a septicemia, although in women the entrance of the bacilli through the urethra into the bladder is possible.

Can intestinal antiseptics affect in anyway the bacilli in the intestinal wall, mesenteric glands or the spleen? It is very doubtful; at least, has never been proven.

Of course, we admit that the severity of the infection may depend on the number of the invading bacilli, but that intestinal antiseptics diminish their number is very doubtful.

Yes, we feel certain that the patients who are constipated almost always have a milder form of the disease. It is not just to assert that constipation has a favorable influence. A good natural action once or twice daily must be considered favorable in typhoid fever as in health. Constipation is rather a symptom of a mild form of the disease than the cause of it.

On the other hand, diarrhea is practically always an unfavorable symptom, it is often caused by overfeeding. Some patients can not digest milk in health, and administering large quantities of milk when they are sick only ends in diarrhea. Diarrhea is often induced by giving infected milk and causes a secondary gastroenteric infection. Finally, diarrhea is a symptom of severe septicemia of any kind. It occurs in severe pneumococcus or streptococcus infections as well as enteric fever. Diarrhea, of course, may also be caused by the tenderness of the intestinal wall produced by extensive ulceration.

Diarrhea interferes seriously with nutrition. The loss of weight and strength is rapid in these cases.

The symptoms of typhoid fever are produced, in the first place, by the soluble toxin of the bacillus. When the bacilli are destroyed in the blood and tissues by the destructive action of the body-fluids (bactericidal substances, antibodies) the endotoxin is liberated. This endotoxin is probably the more destructive of the two poisons and causes the persistence of the fever. The rapid destruction of large numbers of bacilli in the tissues may be very dangerous.

The typhoid bacilli undoubtedly grow in the contents of the bowel. To what extent is as yet problematical. It is so difficult to separate the colon from the typhoid bacillus. Whether or not the system receives much soluble toxin from the bacilli in the intestinal contents is doubtful; that the endotoxin may reach the blood from the intestinal contents can not be affirmed, nor is it very probable.



What proof exists as to the reversal of ordinary osmosis? The absorptive power of the large intestine in health is conceded. Water especially is eagerly taken up by the colon.

Clinical experiments with intestinal antiseptics have also been rather uncertain in their results. Was not Liebermeister very enthusiastic concerning the antiseptic and eliminative treatment by calomel? Who follows this treatment now? Purgatives remove bacteria and at the onset of the disease they are valuable; but it should be remembered that purgatives also hasten the food through the alimentary canal and thereby prevent its digestion and absorption.

We have used a variety of drugs in typhoid fever. We sometimes prescribe the sulphocarbolates. We prefer to control putrefaction of the intestinal contents by a careful supervision of the diet. It is possible that we have learned to do this so well or have placed our attention on dietetic measures too intensely and have not given the sulphocarbolates all the credit to which they are entitled. We are willing to learn. Let Dr. Warragh continue to gather proof and teach us. His enthusiasm at any rate will give us hope.

### RENAL TUBERCULOSIS.

Geo. Walker, of Johns Hopkins Hospital, made a very exhaustive study of renal tuberculosis, an abstract of his work appears in *Surgery, Gynecology and Obstetrics*, (December, 1906). Two articles on the same subject appeared in the *Boston Medical and Surgical Journal* (February 28). From these our modern knowledge of this subject may be briefly epitomized.

Bevan (*Jour. Am. Med. Ass.*, October 6, 1906) has likewise called attention to the frequency and importance of the subject.

#### FREQUENCY.

In 1,369 autopsies at the Johns Hopkins Hospital there were 61 cases of renal tuberculosis. In 12,732 autopsies at Kiel, 62.3% were bilateral and 37.6% were unilateral (Bevan), that is, two out of three cases had bilateral involvement of the kidneys.

In 482 cases which had manifested signs of pulmonary tuberculosis during life, 23 showed tuberculosis involvement of one or both kidneys. In miliary tuberculosis the kidneys are always affected.

#### PATHOLOGY.

Walker, in his examination of a large number of specimens, extending over a period of four years, and from his study of experimental lesions in rabbits' kidneys, arrives at the conclusion that tubercle

bacilli may gain access to the kidney by three distinct routes: *First*, and most commonly, through the blood current; *second*, more rarely, by an extension into the kidney from surrounding organs, principally from tuberculous foci in the vertebrae; and *third*, only in exceptional instances, by an extension upward from the bladder. The opinion, held by some authors, that infection may take place through the lymphatic system, the author believes is unwarranted, inasmuch as no lymphatic vessels going into the kidney have been demonstrated. The most common ports of entry for the bacilli are the respiratory and alimentary tracts. That they may thus enter the system without producing lesions in the mucous membrane, the author has clearly demonstrated. In experiments on animals fed on an emulsion containing tubercle bacilli, and killed several hours later, the mucous membrane was found to be intact, but the neighboring lymphatic vessels showed tubercle bacilli, and soon, also, the organisms appeared in the bronchial lymph-glands. Once these bacilli have gained entrance to the blood, if arrested in their course, in organs where conditions are favorable, a localized tuberculosis is produced, and it is well established that this is the pathogenesis of most cases of renal tuberculosis.

Researches have proven conclusively that in the majority of instances the tubercle bacilli are stopped first in the glomerulus, and are propagated from this point. The bacilli may pass out through the glomerulus in three ways: 1. When fusion of the tuberculous area with the capsule occurs, a direct invasion is rendered possible; 2. They may pass into the small blood-vessels at the base of the glomerulus; 3. They may pass into the cavity of the capsule and down the tubules, where they lodge. As these early tuberculous processes, whether in the glomerulus or tubule, become disseminated throughout the kidney, the organ shows a slight, or occasionally a considerable increase in size. The non-invaded kidney structure not infrequently shows a definite diffuse nephritis."

#### ETIOLOGY.

Primary renal tuberculosis is rare, the process is usually secondary to tuberculosis in other organs. The largest number of cases occur in the decade between 20 and 30 years. It occurs almost to an equal extent in the sexes.

"The bacilli appear in the urine very early in renal tuberculosis, and are always present with the pus and *debris*. The frequently reported failure to find the specific organism the author believes to be due to inaccurate observation, for his experience has taught him that a thorough search will lead to their discovery in nearly every instance.

His method of procedure is given in detail. When he was unable thus to demonstrate their presence, guinea pigs were inoculated. The inoculated animal should develop tuberculosis in from two to five weeks.

A source of grave error has been the frequent confusion of smegma bacilli with tubercle bacilli. The author, from other sources, has collected reports of a number of operations, which were performed for a tuberculosis of the kidney, the diagnosis having been made on the supposed presence of tubercle bacilli in the urine. At operation no tuberculosis was found. This error, the author has found, can usually be eliminated by obtaining with great care a catheterized specimen. When this is impossible, a reliable differential stain should be used, or, as suggested by Trudeau, in all cases a guinea pig should be inoculated."

#### DIAGNOSIS.

"It is only in the earlier stages that diagnosis is difficult, and likewise of the greatest importance. Here there may be present only one of the above enumerated local signs. Very frequently it is that of bladder irritation. This fact should be given emphasis.

*The tuberculin test*, while resorted to frequently, is, the author states, not entirely without danger, for it undoubtedly produces definite changes in the epithelial cells of the kidney. The probability of other foci in the body renders the test of doubtful value.

*Method of Determining Which Kidney is Affected*. While the subjective signs and palpation render material aid, the most conclusive evidence is obtained by means of the cystoscope. Also, when further proof is necessary, the ureters should be catheterized. This latter procedure, while objected to by a number of operators, mainly on the ground of possible infection, is, in the opinion of the author, a safe and justifiable one if carried out under proper precautions. The various other methods of obtaining from the bladder the individual urines is considered impracticable and not without danger.

*The Functioning Capacity of the Other Kidney*. Since autopsy records prove that the second kidney is diseased or inadequate in from 60 to 75 per cent of the cases, and that a single kidney is present in every 5,000 individuals, it is vitally important to determine the presence and working capacity of a supposedly sound kidney when a nephrectomy is contemplated. For determining that two kidneys are present, the cystoscope is the most reliable agent. It should be borne in mind, however, that a source of error is encountered in malpositions and double ureters. The functioning capacity should be determined, first, as regards the permeability, by the use of methylene blue,

the secretory function by phloridzin, and the amount of work which the kidney is doing by cryoscopy."

Watson expresses himself as follows:

"*The means employed* to determine the presence of the disease in one kidney and its absence in the other consist in testing the urine drawn from each kidney separately with ureteral catheters. These tests being to determine the presence of tubercle bacilli, of pus and blood, and by inoculations.

One other diagnostic evidence of the presence of the infection in the kidneys deserves special mention. I refer to the cystoscopic appearances of the orifice of the ureter of the infected kidney and of the part of the bladder immediately adjacent to it, which appearances are so characteristic to those surgeons who are thoroughly familiar with them—Hurry Fenwick, Willy Meyer and some others—that they are all that is needed for them in order to make an absolutely positive diagnosis of tuberculosis of the corresponding kidney."

The usual symptoms which should warn us to search for renal tuberculosis are: Slight elevation of temperature, loss in weight or strength, pain and tenderness over one or both kidneys, enlargement of the kidney, and pus in the urine.

#### PROGNOSIS.

Walker has found no record of a single case of renal tuberculosis which healed spontaneously. The disease may become arrested after the destruction of one kidney. The disease may occur in one kidney from one to two years without affecting the other kidney. Death ensues, if the disease is not treated, in from a few months to several years.

#### TREATMENT.

"A systemic treatment has been proven to have little effect on the progress of the disease, removal of the kidney is the only means of cure."—Walker.

Thorndike, however, believes "that in the comparatively small but constantly increasing number of patients where the diagnosis can be made before much destruction of kidney tissue or involvement of other organs has taken place, hygiene and climate should have a chance before the kidney is removed. He believes that this treatment will often do away with the necessity for an operation. For the more numerous later cases nephrectomy is always the operation of choice, and should be done in every instance, if the patient can stand it and if he has another kidney capable of doing a fair amount of work, whether the disease has passed beyond the limits of the organ to be removed or not, and whether the other kidney be involved or not."

Walker thinks that nephrotomy is only a palliative procedure. Nephrectomy by the lumbar route is preferable.

Watson sums up the whole subject as follows:

"1. The kidneys are the first of the genitourinary organs to be involved in the infection in a considerable proportion of male patients, and in a majority of females.

2. That the infection at the outset and for variable periods afterwards involves but one kidney.

3. That we are almost always capable of determining the presence of the infection in one kidney and its absence in the other, when such is the case.

4. That we can determine the functional capability of the other kidney in almost all cases.

5. That nephrectomy performed in cases in which the infection is confined to one of the kidneys, and in which the functional capability of the other one has been demonstrated, yields from 25% to 30% of cures.

6. That the operative mortality when nephrectomy is done under the proper conditions is about 8%."

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## SURGICAL DIGEST

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### TENDON TISSUE VERSUS CATGUT.

• BY M. GEO. GORIN, M. D.

Perhaps as much discussion has been recorded concerning the use of catgut, its possibilities of complete sterilization, different methods of preparing, etc., as any other one thing in the surgeon's armamentarium. An interesting and instructive article under the above heading appears in *The Military Surgeon*, March, from the pen of Dr. Nicholas Senn, who recently accompanied Professor Peary on a Polar Expedition. It was from observing the Eskimo women sewing with the whale tendon that Dr. Senn was induced to secure specimens of the tendon of the narwhal for use in his surgical work. The narwhal is ordinarily about twenty feet in length and along either side of the spine is the broad long tendon which furnishes the sewing material. Boots sewed by the Eskimo women are watertight and extremely durable. This tendon when secured is dried and the native women chew it and stip it into threads. Senn iodized such threads in an aqueous solution of iodine for eight days, on his return, and used them in oper-



ative work. In only one case out of more than fifty did a stitch abscess occur, and in this case could be traced to careless handling of the sutures. At the end of one week the sutures showed but slight changes from absorption. At the end of two weeks they were still firm, but the ring in touch with the soft tissues was reduced about one-half in size. At the end of three weeks the sutures had undergone advanced absorption but were still strong enough to hold the parts they embraced in accurate coaptation. After a somewhat extensive experience with the tendons of sea animals as sutures and ligatures, Senn accords the narwhal first, the walrus second, and the whale last place. He claims that the tendon tissue of these sea animals of the Arctic regions is far superior to that of land animals, from anatomic and bacteriologic standpoints, and that from a commercial, scientific, and practical standpoint is destined to take the place of catgut in the armamentarium of the surgeon.

There are many objections to the use of catgut, or to be accurate, sheepgut, for from the small intestine of the sheep comes the so-called catgut. This ideally prepared should be denuded completely of the mucus lining and transverse muscular coat. Microscopical examinations of fresh or raw catgut rarely fail to find remnants of both layers. The material is taken from a part of the animal always the seat of pathogenic bacteria. On account of its hygroscopic qualities catgut when introduced into living tissues swells and the elasticity is greatly increased, and its mechanical reliability suffers. The tetanus bacillus common in meadows and barnyards is frequently found in the intestinal canal of sheep. When it is desired to accurately coapt important structures for two or three weeks by mechanical means, e.g., in hernial operations, catgut has not been found reliable. Muscle tissue of which catgut is mainly composed, is a poor dependence as a suture. Tendon tissue on the other hand, do not yield under traction to which they are exposed, as the fibres are non elastic and are arranged longitudinally. The dense connective tissue of which the tendons are composed is but scantily supplied with blood vessels and this together with the compactness of its fibres are important factors in resisting microbic invasion. They also resist absorption for a much longer time than an equal sized catgut ligature.

Dr. Senn refers in his article to the report on the use of whale tendon as a substitute for catgut, by Ishiguri, Ex-Surgeon General of the Japanese Army, as early as 1878. With regard to Gridlestone's kangaroo tendon, exploited in this country by the able efforts of Marcy, Senn states that the smallest fibres that can be obtained from the real kangaroo tendon are the size of a knitting needle, while those which are smaller and finer are obtained from the wallaby.

## PENETRATING WOUNDS OF THE ABDOMEN. (MIL-SURG.)

Col. Roman Romanovitch Wreden chief Surgeon of the Russian Army in Manchuria in writing of the vast experience gained from observing these cases in the last war sums up his conclusions as follows:

1st. Active operative interference when admitted by the general condition of the wounded and the surrounding circumstances, is indicated in all cases of perforating wounds of the abdominal cavity with the exception of wounds inflicted by the modern small caliber undeformed rifle bullet.

2d. In cases of wounds inflicted with the modern rifle bullet, the expectant treatment as the most rational one, gives the best results.

3d. All wounded in the abdomen need full rest at least during the first week after infliction of the wound.

4th. Morphia is a powerful, scientifically indicated remedy in curing penetrating wounds of the abdominal cavity.

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SARCOMA OF THE LONG BONES.

This subject is of great interest, both from a pathological and surgical point of view. Gross was the first to publish a detailed study of any considerable number of cases in 1879. While Gross's paper was exhaustive and offered a study of 165 cases gathered from American and foreign reports, yet at this day it is to be considered incomplete for two reasons, first that the cases were treated before the days of antiseptics, and secondly that only a few were traced to final results. Perhaps the largest number of cases (69) reported by a single observer is contained in the recent paper of Coley (Ann. Surg.)

Considering the high mortality whether with operative treatment or without that has attended the treatment of sarcoma, the subject seems a gloomy one for the surgeon's contemplation. Yet the author considers the results attained in a number of these reported cases justified the hope of better results in the future, and warrant a radical departure from the present recognized method of treatment. That new methods of treatment of sarcoma of the long bones are urgently to be desired a study of recent series will readily show. Out of a series of 46 cases at v. Bergmann's clinic only four were well beyond three years. Of these two were myeloid sarcoma of the femur; one a periosteal sarcoma of the humerus, and one a myeloid sarcoma of the tibia. Of 54 cases observed at König's clinic seven were well beyond three years. Three of the tibia, one of the femur, and two of the humerus and one of the radius. Of the 65 cases at the Tübingen clinic nine

were well beyond three years. Three of the femur, three of the tibia, one of the radius and one of the ulna. Butlin after reporting a series of 68 cases collected from English and German clinics with only one well beyond three years, concludes "We cannot but form the opinion that the disease (periosteal sarcoma of the humerus) is horribly and rapidly fatal, and that the prospect of a complete cure or even long immunity from recurrence is singularly small." Concerning subperiosteal sarcoma of the femur he says "From every point of view I cannot but regard it as a remarkably deadly disease, and I am not yet clear that surgery can do more than palliate the distress occasioned by it and that only in a comparatively few cases. The only hope is a very early diagnosis and in very high amputation."

Coley states that in his series of cases operative results were equally discouraging, though of his series of 69 cases ten remained well over three years. The most important observation, however, made as a result of a detailed study of a considerable number of cases is with reference to the use of mixed toxins in their treatment. The author has collected up to the present time twelve cases three personal, and nine of other observers, in which the use of the toxins has rendered amputation unnecessary and the limb has been saved. In 8 of these cases the sarcoma was of the round celled variety, in 2 spindle celled, and in two no microscopical examination was made, but amputation had been strongly advised in both instances by prominent surgeons. The period of observation of these cases is important. Eight were alive and well and free from recurrence from three to eight years, 1 two years, and 1 one year; two other cases have been observed less than six months. In 5 of these cases the tibia was involved, in one the fibula, in 3 the femur, in 1 the radius; in 1 the humerus. In every one one of these amputation had been seriously considered, but it was thought justifiable to give the toxins a chance before resorting to operation. These cases seem to me sufficient in number and the period of observation sufficiently extended to justify us in advocating a course of treatment with the mixed toxins in practically all cases of sarcoma involving the long bones before sacrificing the limb. It is important to note that in two of these cases, sarcoma of the femur involving the upper end the disease was so extensive that amputation at the hip joint was impossible. In both of these the diagnosis had been confirmed by microscopical examination.

If we could offer the patient a reasonable hope of life by amputating the limb there might be some ground for hesitating to try the toxins before amputation; but in the face of our inability to save the life of the patient except in a very small minority of cases I feel that

we are risking little in giving the patient the benefit of a brief trial with the mixed toxins. A period of three or four weeks will almost always be sufficient to determine the probable success or failure of the treatment. If a tumor continues to increase during that period amputate. With this important exception the author would limit the use of toxins to inoperable sarcoma.

#### APPENDICITIS IN THE NURSING.

Kermisson and Guimbellot report a case of acute appendicitis in a nursing, aged 11 months, brought up on the bottle which, with the exception of some diarrhea had had no other illness. Habitually had three passages a day. On the day of the attack the infant had a stool about four in the afternoon. In the evening he commenced to fret, then to cry, and had an air of suffering. During the night he vomited. Sunday morning the belly was swollen; pain persisted. During Sunday he did not vomit, but his bowels did not move; and Monday, being seen by a physician, was sent to the hospital.

The abdomen was enormously swollen, the skin tight, and blue veined. Pressure on the abdomen was painful, particularly in right iliac fossa. Percussion tympanitic, with elimination of liver dulness. Rectal examination negative. Operation: On opening the peritoneum, serous effusion of fecal odor escaped. The cecum was quickly found and the appendix, gangrenous at its tip, removed. It was very friable and the ligature cut through. A fine silk suture closed the cecal end, and drains were introduced, one in the pelvis, a second in the lumbar region, and a gauze tamponade of the wound completed the dressing. The child died at five o'clock in the afternoon. No autopsy allowed. The appendix was between six and seven centimeters in length, increased in size and very vascular—gently curved in the direction of the mesentery. Within the lumen was a fecal concretion the size of a pea. Near this were two perforations. The authors cite twenty-six other cases from literature of appendicitis, occurring in very young children of the age of two years and under. Thus there have been reported three cases occurring in children 6 weeks old; one of 8 weeks; two of 3 months; one of 5 months; two at one year; one at 14 months; one at 15 months; two at 18 months; one at 19 months; two at 20 months; one at 21 months, 4 at 22 months; one at 23 months; and three at 2 years.

The authors divide these 26 cases into two groups, 9 occurring during the first year and 17 during the second year. The only cases saved were those in the second class, and over the age of 18 months. Thus there were 7 recoveries and 10 deaths in this second group.

The authors make the following observations: During the first year there is always a general purulent peritonitis or at least multiple foci of suppuration; and in certain cases lesions of liver, kidney, lung and endocardium. Between the first and second years of life the cases of localized peritonitis, with encysted abscess, in which lays the appendix, predominate. This is almost always adherent. In five out of eleven operations, the search for the appendix was abandoned. Perforation occurred sixteen times. In three cases complete perforation was absent. In one case a black-headed pin was found in the lumen of the appendix. No parasites were found in any of the cases. Most of the children seemed to have had antecedent gastro-intestinal irritation, in which the appendix had participated. In eighteen cases, where it was possible to inquire concerning the history, ten times there were found troubles of variable intensity, ranging from habitual constipation to severe enteritis. As to the influence of the mode of alimentation, in twelve observations on this point three of the children were breast fed. In the nine other cases the children were fed on the bottle, on broths, on malted milk, but never on meat. The twenty-six observations, in fact, contradict absolutely the views of those who ascribe appendicitis to an exclusive meat diet.

There are two forms in which this disease attacks the infant: In the first, the onset is marked by gastro-enteric troubles. There has been for some time fetid diarrhea or constipation. The child vomits, has a little fever, and grows thin. The symptoms become aggravated without its being possible to say just when the appendicitis commenced. The vomiting increases, the temperature rises, the pulse accelerates. The impossibility of questioning the child, the cries which it continually emits, prevent us from localizing the point of greatest pain. The belly distends, general peritonitis becomes established and the child dies without appendicitis having been even dreamed of.

In the second form, the onset is, on the contrary, abrupt, supervening during a period of good health, or after very slight intestinal troubles.

The infant suddenly commences to cry, has one or two attacks of vomiting, some fever, a tender and painful abdomen and rapid pulse. Beyond the tender age of the subject and the difficulty of the examination, the diagnosis is easy. The writers insist upon the obstinate constipation as a symptom. They have often remarked on the frequency of this symptom at the onset of an appendicitis and the difficulty of distinguishing it from certain cases of intestinal obstruction, but it seems to the authors that in obstruction the obstruction to the passage of fecal matter and gas is more complete. If there were not fever and



were not bloody discharges absent one might think of intestinal invagination. This error has, in fact, been made, and is with difficulty avoided. In fact, the diagnosis is surrounded with difficulty, because of the impossibility of questioning the child, the difficulty of palpating a struggling infant, the difficulty of establishing a point of greatest tenderness in a patient who cries constantly. This explains the variety of intervention which alone offers any hope.

The authors draw the following conclusions:

1. Appendicitis in the first two years of life is not so rare as has been supposed.
2. Its evolution is rapid; its prognosis very grave.
3. The only cases of cure, up to the present time, are those in which prompt operation has been done.
4. The difficulty of coming to the conclusion to operate depends on the difficulty of the diagnosis. Hence it is valuable to collect and publish all such cases.—*Rev. de Chirurgie*, Oct., 1906, *N. Y. State Jour. Med.*

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#### THE DIAGNOSIS OF IMMINENT PERFORATION IN TYPHOID FEVER.

Dr. Hawkes read a paper on this subject before the New York Academy of Medicine, the principal points of which are found in the *Medical Record* (March 9).

Without going into the bibliography of the subject, the established facts warranted the following statement: The proportion of typhoid fever patients who had perforations varied in the different epidemics from 1 to 33 per cent., and probably from 6 to 10 per cent. was not far from the average. Osler had stated that one-third of the mortality in typhoid fever was due to perforation. Of this number about one-half might now be saved by operation if the most favorable conditions existed for early diagnosis and prompt surgical help. These favorable conditions were necessarily present to a greater degree in those hospitals in large cities that were provided with a corps of trained nurses in the wards, trained physicians on the house staff, and a sufficient number of attending surgeons for a prompt response to such emergencies. Operators agreed that every hour that elapsed between the perforation and the time of operation decreased by so much the patient's chances, and that other conditions being equal, good results should generally be obtained in operations done for ulcers that were either perforating at that moment or that had perforated just before. Any marked improvement, therefore, in the mortality rec-

ords of these cases would have to come through a similar improvement in the diagnosis of the affection, or of the conditions which led up to the perforation. The so-called symptoms of perforation, "intense pain, marked tenderness, marked muscular rigidity or spasm, varying degrees of collapse, variations in the pulse rate and temperature, etc.," were in reality only the late symptoms of a previous peritonitis which had kept on developing many hours after the so-called perforation. It was his experience that the earliest symptoms of peritonitis in typhoid and in many other abdominal diseases were, as a rule, neither recorded nor noticed. Nurses should be carefully instructed to report to the house physician any pain in order that he might examine immediately for other signs of a beginning peritonitis. In a series of 500 cases observed in Oster's ward, McCrae stated that no pain existed in 208 cases (41 per cent.), and that pain existed during some time of the disease in 44 per cent. of the cases. If one considered abdominal pain alone it would help but little; other symptoms of a beginning peritonitis should be considered with it. He had seen a number of patients in whom other symptoms of peritonitis developed before that of pain; namely, muscular rigidity and tenderness, and in quite a number of cases the pain left before the muscular rigidity and tenderness, which persisted until the peritonitis had subsided. Even a very slight degree of muscular rigidity, when present *without pain*, should cause one to keep a watchful eye on the patient. If pain supervened, or if it existed at the time of the first examination, a surgeon should see the case at once, for two distinct danger signals were already set, and if they had localized abdominal pain and abdominal rigidity, they were almost certain to have the other symptom, tenderness. In many cases these were enough to warrant an exploratory operation if the patient was in good condition. The other diseases that were liable to occur in the abdominal region of a patient with typhoid fever that would give these three symptoms, without any peritonitis being present, were hysteria, lead colic, passage of a biliary or a renal calculus, and appendicitis without peritonitis (early). After ruling out these conditions one must look further for corroborating symptoms, as increased leucocytosis, slight shifting dullness in the flank, an increase in the blood pressure, etc. He said they were forced to conclude that a positive differential diagnosis of a perforative peritonitis or of an imminent perforation, was a very difficult matter, but a tentative one should be made much oftener than in the past at an early date, by examining the abdomen in the typhoid patients sufficiently often and with the utmost care. He believed the diagnosis of even mild peritonitis in a typhoid should mean operation and drainage if the patient was in a

condition to stand it. After reporting two cases, Dr. Hawkes concluded that in many cases of typhoid fever a perforative stage of peritonitis was present which could be recognized as a beginning peritonitis if a sufficiently careful and a sufficiently frequent examination of the abdomen was made. They should divest themselves of the idea that the absence of pain in a given case ruled out any appreciable amount of peritonitis. Muscular rigidity and slight tenderness, usually localized, often preceded the symptom of pain by several hours. This prealgesic period would seem to be the very best period in which to institute peritoneal drainage of a loop of intestine with swollen ulcer patches, thus relieving the patient from the extra burden of the secondary infection and giving the ulcers a chance, if they were going to break down, to do so through a drainage tract. He stated that he had not intended taking up the symptoms of perforation in his paper, but of the preperforative period.

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### THE USE OF RUBBER GLOVES.

Some surgeons are beginning to question the advisability of using the rubber glove in all surgical operations.

Walther in discussing this subject admits that by the use of rubber gloves it is possible for the surgeon to operate with perfectly sterile hands, but he considers that in spite of the statements made by many surgeons, even long habituation to their use does not compensate for the impairment of tactile sense the gloves entail. Particularly in such obstetrical manipulations as removal of the retained placenta or in cleaning out the uterus after an incomplete abortion is it desirable that the operator shall have full possession of the utmost degree of tactile sensibility, and under these conditions the use of gloves may be a source of danger rather than of safety. It is his attitude that the gloves should be used rather for the purpose of protecting the physician's hands from contamination in making rectal examinations, handling infectious material, etc., than as a routine in operative surgery and gynecology. In regard to a proposal recently made to have the use of gloves made obligatory for country midwives, Walther expresses his unqualified disapproval of such a measure. It is necessary, if gloves are to be used, that both the hands and the gloves be sterilized with all possible care, and if the gloves are made compulsory, the average midwife is sure to relax her precautions in the one respect or the other. The introduction of the glove would form a needless addition to the appliances to be kept in order by the midwife

and would be found an unnecessary, expensive, and dangerous innovation."—(*Munch. Med. Woch., Med. Rec.*)

Dr. Morris, of New York, recently also objected to their use in cases of appendicitis. We will give his own words:

"In the Middle Ages there was an ogre on the other side of every hill.

People gradually overcame their fear of ogres, and began to get scared about witches.

After witches had been duly burned, surgeons were frightened about opening the peritoneal cavity. When I was a student, we were taught to have a chill whenever the subject was broached, and the textbooks described various ways for avoiding the grewsome mishap.

After ogres, witches, and normal peritoneum had been disposed of, we began to enjoy a fear of pus in the peritoneal cavity. Surgeons passed through the transition period of washing their hands after operation instead of before, and arrived at the stage of aseptic preparation of the hands. Then, in logical sequence, we began to wear rubber gloves, and employed them in intraperitoneal work, even though infection were already present. What do you think of that? What do you think of that?

Charlemagne baptized a lot of Mohammedans and then laughed up his sleeve when he saw them gravely bowing to the East after that, for he knew that they were securely Christians. We put on rubber gloves and smiled at the thought of bacteria doing a thing to the patient after we had conscientiously tried to remove infection which could in fact be removed best by the patient himself. Worse than that, when we put on gloves for a boxing match with the patient's vitality, we rapidly placed him in an unfavorable position for self-defense. The use of rubber gloves made it necessary to use such long incisions that we could work by sight, and this lowered the patient's vitality.

Long incisions are employed for killing bears, and we chose for saving weak patients the methods which are in use for killing bears.

Rubber gloves led to slow work, and that further reduced the natural resistance of patients. Tait without antiseptics or asepsis showed that his facile fingers could bring out better statistics than we can get with an iron-like hand in a glove of rubber. Tait was a thorn in the side for most of us. Nowadays we understand that he conserved the natural resistance of his patients, and turned the management of infections over to them, but in his day the only comfort that we could get was in the forlorn hope that he might be untruthful. Tait was a perennial insult to us, unless we could get even by making a retort.

Slow work means a longer period of anesthesia—a longer debauch with an intoxicant."

Dr. Morris insists on simple quick work, the patient's power of resistance must always be spared, and rubber gloves do not do this. To quote again:

There are places in which rubber gloves should be used. In opening an uninfected knee joint, for instance. The house staff at the hospital would transfer too many proliferating colonies of bacteria, if rubber gloves were not worn on rounds when dressings are changed.

In some outside work, as in hernia operations, where we work by sight anyway, rubber gloves will give the best statistics, unless the slower work allows more bacteria to fall in from the air than would be carried in by the hands. The last point is an important one. Among human faculties the sense of proportion ranks just above moral sense in value. Psychologists may not agree with me, but they do not agree with each other. It is discrimination that we need more than rubber gloves. The subject allows of pretty good classification in a general way.

Rubber gloves may be useful: (1) In cases in which there is no infection or other disease to call out the patient's natural resistance to infection. (2) Where dressings are to be changed for several patients in succession, or where the surgeon operates upon an uninfected patient shortly after operation upon an infected one. In the latter case, if the patient were to be consulted in the matter, he would probably ask to have his operation deferred until spring anyway. Rubber gloves are not needed—or worse than that: (1) Where infection is already under way, and the patient is calling out his own protection. (2) Where a disease like cancer has already called out such a degree of protection that the old-time war doctors could amputate a breast and get primary union under "well-waxed shoemaker's thread" that had been held in the mouth or over the ear while operation was in progress. (3) Where no infection or other disease is present, but where slow or extensive operating necessitated by ungainly gloves will allow more bacteria to fall into the wound than would be carried in by well-prepared bare hands.

The argument has been made that the surgeon should wear rubber gloves for his own protection. For whom are we working?



## HOUR-GLASS STOMACH.

The study of cases and a careful review of the literature have convinced Moynihan that there is no evidence that the hour-glass stomach is congenital.

The causes of acquired hour-glass stomach are: (a) Perigastric adhesions; (b) Chronic ulcer; (c) Malignant growths.

*Symptoms.* The symptoms and characteristics of hour-glass stomach permit of a positive diagnosis in the majority of cases. In fourteen of his last sixteen cases, a correct diagnosis was made.

1. If the stomach-tube is introduced and the stomach washed out with a definite amount of fluid, the partial recovery of this fluid will be noted; for example, if 850 grams were used, only 720 grams would be recovered. Woelfler, who first noted this sign, says that a part of the fluid seems to disappear as if through a large hole, when in fact it has escaped from the cardiac into the pyloric portion. (Woelfler's first sign.)

2. If the stomach is washed until the fluid returns clear, there may occur later a sudden discharge of a foul-smelling fluid, or if the stomach-tube is withdrawn and then introduced some minutes later, a few ounces of this foul-smelling fluid may be withdrawn. This fluid is regurgitated through the communication between the cardiac and pyloric portions. (Woelfler's second sign.)

3. *Paradoxical Dilatation.* If a splashing sound can be elicited and the stomach then emptied by a stomach-tube, a distinct splashing sound can still be heard. The cardiac portion only has been emptied; the pyloric portion still contains fluid and gives the sound.

4. Von Eiselsberg observed, in one of his cases, that inflation of the stomach with  $\text{CO}_2$  gave rise to a prominence in the left of the epigastrium. After some minutes this gradually subsided, and simultaneously a prominence could be noted on the right side of the epigastrium. (Von Eiselsberg's first sign.)

5. Von Eiselsberg also directed attention to the gurgling, hissing sound heard upon auscultation after inflation of the stomach with  $\text{CO}_2$ . If the normal or dilated stomach is inflated with  $\text{CO}_2$ , this sound is heard at the pylorus only. If the stenosis involves the body of the stomach, this loud rustling noise can be heard 5 to 8 cm. to the left of the median line.

6. Moynihan has employed for about five years a method which has proved valuable in making the diagnosis of hour-glass stomach. The two halves of a Seidlitz powder are given after the abdomen has been carefully examined and the outlines of the stomach determined. About twenty or thirty seconds later, a loud tympanitic note

can be elicited over the upper part of the stomach, while the tone over the lower part remains unchanged. By watching the abdomen for some time, occasionally the pyloric part can be seen to fill and become prominent.

7. Schmid-Monard, and likewise Eichhorst, has seen a distinct furrow between the two parts of the stomach after inflation with  $\text{CO}_2$ .

8. Ewald directed attention to the fact that if the stomach is filled with water and gastroduaphany employed, the cardiac portion is transparent, the pyloric portion dark.

9. Turek and Hemmeter's balloon is introduced and inflated. The prominence is limited to the cardiac portion of the stomach, which lies to the left of the median line.

1. Gastro-enterostomy alone can be employed only in the few cases in which the stenosis is not more than from 2.5 to 7.5 cm. from the pylorus, in which the pyloric portion is small and not dilated, and can really be neglected surgically. In these cases the cardiac portion may be regarded as representing the whole of the stomach. If both parts must be drained, a double gastro-enterostomy, according to Weir and Foote, may be performed.

2. Gastroplasty is an operation of limited application. It is useful only in those cases in which a stricture without induration, fresh ulceration, or external adhesions is present. The cases in which it has been employed are rare, and even in these a more successful operation could have been performed. The operation consists of a long, transverse, or slightly curved incision through the stricture. The incision should be at least four inches long, and each end should be carried into healthy tissue. The middle of the upper and lower edges of the wound is grasped with artery-forceps, and later sutured vertically, as in pyloroplasty. Dr. Kammerer, employs the principle suggested by Finney in his pyloroplasty.

3. *Gastro-gastrostomy or Gastro-anastomosis.* This operation was first introduced by Woelfler in 1894. He made a vertical incision 7 cm. long in each segment, and then united them, making a free communication between the two.

4. Partial gastrectomy is used more frequently in malignant than in benign conditions.

5. Digital divulsion or dilatation.

Adhesions to the anterior abdominal wall, liver, and pancreas may be so firm that operative manipulations may be very difficult.—*Mittel, a. d. Grenzgebiet, Med. u. Chir.*, 1906, xvi, 143-160.—*Surgery Gynecology and Obstetrics*.

## THE HIGH OPERATION FOR VARICOCELE.

The high operation for varicocele has certain advantages. The operation is performed in a field which can be readily sterilized, thus reducing the dangers of infection, and the scar is removed from the irritating secretions about the scrotum.

The operation is readily performed under local anaesthesia and through a small incision. The skin in the line of the incision is infiltrated with a 1-1000 cocaine solution. A longitudinal or transverse incision may be employed; probably the latter is the more satisfactory.

The center of the transverse incision of three-fourths to one inch in length corresponds to the external abdominal ring, and is slightly above it. The skin and the fascia are incised, and the structures composing the spermatic cord are lifted up on a Kocher's director. The intercolumnar, cremasteric, and transversalis fasciæ are next incised parallel to the cord. This permits of the separation of the veins of the pampiniform plexus, from the vas deferens and its accompanying veins. The veins of the plexus are next ligated and resected, the extent of the resection depending upon the size of the varicocele. The veins accompanying the vas deferens are undisturbed. The ligatures applied to the veins to be resected are left long and tied later. This elevates the testicle. The spermatic artery is sacrificed in this operation, but the artery accompanying the vas deferens provides for the nutrition of the testicle.

The fascia is next sutured with fine catgut, and the skin with horsehair. A triangle bandage is applied to support the scrotum and testicle.

It is advisable to keep these patients in bed from eight to ten days, until the organization of the thrombus is complete. Unfortunate accidents, such as pulmonary embolism, have resulted from early activity on the part of the patient.—*D. D. Lewis in Surgery, Gynecology and Obstetrics.*

## FOURTEEN THOUSAND SURGICAL ANESTHESIAS.

Alice Magaw, of Rochester, contributes a very valuable article (*Surgery, Gynecology and Obstetrics*, December, 1906) on the general subject of anesthesia and gives her experience with the enormous number of 14,000 cases. When at present there is such an anxiety to find some new method it is reassuring to read:

"At St. Mary's Hospital our preference has always been ether. In 1905, out of 3,080 anaesthetics 2,847 were ether. In 14,380 anaesthetics

tics given by me. I have yet to see a death directly from the anæsthetic, but, no doubt, have had my share of trouble in its administration, although artificial respiration with us is almost unheard of. Our experience with ether has become more gratifying each year. In my series of cases, the "open method" has been the method of choice. We have tried almost all methods advocated that seemed at all reasonable, such as nitrous oxide gas, as a preliminary to ether (this method was used in 1,000 cases), a mixture of scopolamine and morphine as a preliminary to ether in 73 cases, also chloroform and ether, and have found them to be very unsatisfactory, if not harmful, and have returned to ether "drop method" each time, which method we have used for over ten years.

On account of this method not being followed properly, it is not always appreciated. We use a four-ounce ether-can and fit an ordinary cork with a groove on either side into its mouth, fill one groove with absorbent cotton and let it extend out of the can about one inch. One can regulate the drop easily by the manner in which the point is clipped. We usually fix two cans, one with a large dropper, and use it until the patient is fully under the anæsthetic, and then change to the other can with the small dropper, and continue its use during the operation."

The writer uses the improved Esmarch inhaler. The dropping is done as carefully with ether as chloroform until the face of the patient is flushed when a few layers of gauze are added and the ether is given a trifle faster. To quote again:

As it requires very little ether to keep a patient surgically etherized, one can change to the small dropper during the operation. A much deeper narcosis is required to start an operation or to make the incision than later on, when the operation is in progress. It is useless to touch the cornea, as so many advocate, as it tells us nothing and is unscientific. Only the inexperienced take the pulse and touch the conjunctiva when giving ether.

Suggestion is a great aid in producing a comfortable narcosis. The anæsthetist must be able to inspire confidence in the patient, and a great deal depends on the manner of approach. One must be quick to notice the temperament, and decide which mode of suggestion will be most effective in the particular case: the abrupt, crude, and very firm, or the reasonable, sensible, and natural. The latter mode is far the best in the majority of cases. The subconscious or secondary self is particularly susceptible to suggestive influence; therefore, during the administration, the anæsthetist should make those suggestions that will be most pleasing to this particular subject. Patients should

be prepared for each stage of the anaesthesia with an explanation of just how the anaesthetic is expected to affect him: "talk him to sleep," with the addition of as little ether as possible. We have one rule: patients are not allowed to talk, as by talking or counting patients are more apt to become noisy and boisterous. Never bid a patient to "breathe deep," for in so doing a feeling of suffocation is sure to follow, and the patient is also apt to struggle.

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### GASTRO-MESENTERIC ILEUS.

Finney's attention was called to this interesting and obscure condition by Zade's article upon the subject (*Beitrag zur klin. Chirurgie*, 1905, bd. 46, s. 388; review *Surgery, Gynecology and Obstetrics*, December, 1905), and by a case occurring in his practice. The patient was a female aged 46. Two months before admission to the hospital she was operated upon for "womb trouble." Following this operation there had been persistent nausea and vomiting after taking food or water. She had lost in weight and strength; continued unimproved by medical treatment during the following three months, when she was transferred to the surgical clinic.

*Physical Examination.* "Color good; tongue slightly coated; pulse 92; small. The abdomen seems normal; slight epigastric pulsation. No visible peristalsis, no palpable mass, general abdominal tenderness, probably neurotic. Liver and spleen not palpable, no ascites; no jaundice. Area of stomach tympany normal. Red-blood count, 4,416,000; white-blood count, 5,200; hamoglobin, 81."

*Operation.* Stomach found slightly dilated. Pylorus admitted tip of finger. Duodenum slightly dilated. Pyloroplasty performed. Vomiting continued until death.

*Autopsy.* Upon introducing the finger into the lumen at the duodenum an obstruction was met at the point where the mesenteric vessels cross. The examining finger met with considerable resistance in passing the obstruction, which was relieved upon lifting the intestines out of the pelvis. No lesion was found in the wall of the duodenum at this point. The remaining portion of the small intestine was collapsed and lying in the pelvis.

The clinical picture in these cases so closely simulates that of the condition we recognize as acute dilatation of the stomach that the author raises the question whether or not they may not be one and the same thing. He is inclined, however, to consider them as distinct entities, but he is also convinced that a considerable number of cases which have appeared in the literature as acute dilatation of the stomach are really cases of gastro-mesenteric ileus.



After reviewing the literature and discussing the subject from its various standpoints, the author draws the following conclusions:

1. Acute dilatation of the stomach and gastro-mesenteric ileus cannot be differentiated clinically.

2. Obstruction to the lumen of the duodenum by the root of the mesentery and the contained superior mesenteric vessels has been demonstrated, and is probably of more frequent occurrence than has been supposed.

3. Whether this is primary or secondary to the gastric dilatation, or whether this relationship is a constant one, has not been determined.

4. The diagnosis would appear to be more easy than past failures seem to indicate.

5. The use of the stomach-tube and avoidance of dorsal decubitus offer better results probably than secondary operation, owing to the unsatisfactory conditions existing.

6. With earlier diagnosis and the early institution of the measures just suggested, an improvement in the very high rate of mortality can be confidently expected.—*Boston Medical and Surgical Journal*, August 2, 1906, p. 107.—*Surgery, Gynecology and Obstetrics*.

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### WHY GASTRO-ENTEROSTOMY IS NOT A HARMLESS OPERATION.

Recently there have been many brilliant successes recorded in the field of stomach surgery, also a number of gastro enterostomies reported which were not wholly successful, and doubtless a greater number not reported which were not at all successful. Since it has been possible to observe the subsequent history of many gastro-enterostomies a number of important facts have been ascertained. Portis (An. Surg.) presents several local reasons why this operation should not be lightly undertaken, e. g., as some operators have advised for chronic catarrh, gastropnoia, and hysterical vomiting. Some thirty-five cases of jejunal ulcer occurring near the anastomotic opening, have been reported by Tiegel, Jahr and Watts, which in the author's opinion is due in a large measure to the acid contents of the stomach striking the jejunum unaccustomed to such an insult. After presenting at some length the physiological action of the duodenum the author draws the following conclusions:

1. The stomach may be looked upon as an organ for the protection of the bowel. The normal functions cannot be improved upon by any operation, and gastro-enterostomy is at all times a dangerous operation.

2. The functional disorders of the digestive tract which occur after gastro-enterostomy and may seriously interfere with nutrition, and the severe diarrhœa as which may come on, are due not only to the premature emptying of the stomach, but also to the failure of neutralization by the bile and pancreatic juice of these acid products. This deficiency of bile and pancreatic juice is due to the absence in the duodenum of the hydrochloric acid, which stimulates both of these to flow.

3. The numerous record cases of ulcer of the jejunum following gastro-enterostomy and their persistence of symptoms, if not fatal termination, lead us to advise gastro-enterostomy only as a last resort.

4. The neurasthenic individuals who suffer from chronic dyspepsia not only are not benefited by gastro-enterostomy but are made worse. This also applies to the dyspepsia due to imperfect mastication. The so-called atonic dilatation of the stomach and gastroptosis never are benefited by gastro-enterostomy.

No operation is indicated in acute ulcer unless perforation is imminent or has occurred, or serious hæmorrhage compels it.

Gastro-enterostomy is not indicated in chronic ulcer of the stomach, unless there are repeated small hæmorrhages which menace life, grave adhesions or persistence of marked symptoms even after prolonged and thorough medical treatment.

Gastro-enterostomy should always be done where the natural evacuation of the stomach is impossible and pyloro-plasty or gastro-duodenostomy are not feasible. When the operation is done it is best to close off the pyloric opening.

## MEDICAL DIGEST

### ACUTE LEUKAEMIA.

Emerson (Bulletin Johns Hopkins Hospital, March) reports three cases of acute leukaemia and discusses the subject in general. The first was a case of the so-called lymphatic or lymphoid, or better still, myeloblastic type. The case was not only truly myelogenous but the lesion of the bonemarrow was apparently localized in the vertebral column. He discusses the disease as follows:

Acute leukaemia is a condition which may be suspected but cannot be diagnosed without a blood examination. It is protean in form, suggesting both in onset and course many other diseases, among which are acute tonsillitis, diphtheria, scurvy, typhoid fever, malaria, tuberculosis, ulcerative endocarditis, purpura hamorrhagica, septicæmia, pyæmia, pernicious anæmia, and osteomyelitis.

A common form is the "typical" form suggesting chronic leukaemia and differing from it only in its greater acuteness and severity. There is sudden enlargement of the lymph glands of all or of certain groups. In some cases, the glands of the mesentery and the lymphatic tissue along the intestine are involved. The tonsils are enlarged, sometimes they almost touch; the thymus persists. There are even lymphoid nodules of the dura mater. The spleen is usually enlarged, early, if not at first, and the liver also. In these cases the diagnosis is easy since the clinical picture suggests leukaemia, but great difficulties are in the way of the determination of the acuteness of the case, since a preceding, latent, chronic leukaemia is very hard to rule out. One is usually safe in assuming that the blood condition has lasted at least as long as the discovery of enlarged glands or large spleen. To find the spleen large and hard on first examination is evidence against acute leukaemia, hence we have ruled out some cases reported in literature under this title. One may expect to watch the spleen grow in size and firmness. Yet this is not always true. Cattin reports an acute case in which after four weeks' illness the spleen weighed 2500 gms. In some cases the lymph glands enlarge late and then increase rapidly in size.

The acute infectious type is not uncommon. At first it simulates typhoid fever, and later not one element of acute streptococcus septicæmia is absent except the demonstration of the organism. The high fever, continuous or intermittent, the chills and sweats, the extreme prostration, rapidly developing anæmia, even the keen mind

suggesting a streptococcus infection, all make a very suggestive picture. There are some (Rose Bradford, Barlow, and Osler) who hold that these cases are acute infections in which the changes in the blood are but a blood reaction, and a very different disease from the ordinary chronic leukaemia. It is certain that true septicemias can produce a blood picture quite like acute leukaemia, and in the bone-marrow of cases otherwise clearly acute leukaemia organisms have been found. Holst reported three such cases of acute leukaemia. In the first streptococci were isolated from the exudate of the knee and at autopsy from the lymph glands and blood. From the second bacilli and streptococci were isolated at autopsy. In the third streptococci were isolated from the bone-marrow. The abstract of this paper in French gives no details of the cultures. Again, only an infectious disease would be likely to produce both the blood and marrow changes, and acute enteritis, acute pleurisy, acute bronchitis, acute endocarditis, and acute nephritis.

It has long been known that acute infections may cause a high leucocytosis with many myelocytes, and resemble acute myelocytic leukaemia, also a blood picture with normal leucocyte count but the formula of acute lymphoid leukaemia. Holst's second case had a count of 8300, 77% of which were large lymphocytes, 14% small lymphocytes, and 8.3% polymorphonuclear neutrophils. In his third case the count was 8400 and the large mononuclears 93%. The latter was clearly a streptococcus infection of the marrow. Whether all our cases of acute leukaemia will be shown to be due to infections is the question.

Schupfer brought evidence against the infectious nature of this disease by injecting blood from such a patient into cancer cases, and since no change occurred in the cancer, which as a rule reacts in a marked degree to acute infections, he considered the infectious nature of acute leukaemia doubtful.

Other cases suggest a local collection of pus, as abscess of the liver.

A large group of cases assumes the "hemorrhagic form." Some suggest purpura hemorrhagica, or morbus maculosus Werlhofii, as in Osswald's case and Shattuck's case of "infectious purpura." The patients are covered with subcutaneous, submucous, and subserous hemorrhages; there are hemorrhages into conjunctivæ, retinae, and from nose, mouth, stomach, and bowel, and they may die from cerebral hemorrhage (Gordon). They sometimes develop local hæmatomata, as did Barie and Salmon's patient, in which case a hæmatoma the size of a nut appearing just below the angle of the right scapula, grew so

rapidly that on the third day it was the size of an infant's head. It was later opened and 1300 gms. of blood evacuated. These cases are usually fulminant, the anæmia extreme, and the diagnosis made at autopsy.

Another, to which Case I belongs, is the acute cachectic group. Sudden inexplicable weakness, loss of flesh, shortness of breath (Turk, Grawitz, Gordinier), and prostration increasing till death, with perhaps a few petechiæ and ulcers in the mouth, if one looks sharply, yet not so fulminating a course nor with such high temperature as the former, if indeed there is any fever; such is the clinical picture. This is the group mentioned by Jossierand as *simulating pernicious anæmia*. These patients are very pale with a slight but definite jaundice, in addition to the features above mentioned. But the tint is not the same: there is not the brownish pigmentation of primary pernicious anæmia, but rather a whitish pallor, and there is emaciation. They look sicker.

The "bucco-pharyngeal" mode of onset first emphasized by Gilbert is by far the most common, and these symptoms may continue so long that the cases constitute a distinct group, although the majority of cases in the other groups also begin in this way. There are very few cases in which one or more lesions in mouth or larynx cannot be found if carefully looked for. It is even believed that the portal of entry of the disease is through these mouth and throat lesions.

This group is divided into the pseudoscorbutic and the pharyngeal forms. In the pseudoscorbutic type swelling and tenderness of the gums may be the first sign. There is a severe stomatitis often gangrenous, with oozing from the gums, areas of necrosis along the edge of the alveolar processes, and submucous hæmorrhages. With the stomatitis the submaxillary glands are enlarged. Many cases appear to start with the removal of teeth, or at least the hæmorrhage following that operation is the first symptom. Such was true of Case I. of Grawitz's case, from which fourteen teeth were extracted. Some cases resemble malignant disease of the upper jaw (Bradford). Gangrenous ulcers of the mouth are very common, especially ulcers connected with decaying teeth. These may precede the blood changes, and are the symptoms from which the disease dates. The cases of the pharyngeal group begin usually as an acute follicular tonsillitis or as diphtheria as did Edsall's, Patoir and Delon's and Surmoult's. So common are such cases that it may be stated as a dictum "with diphtheritic throat and purpuric eruption in a child, look at the blood," (Jansenhe and Weil.) The blood condition has been attributed to the use of anti-diphtheritic serum. Such cases are probably acute leukaemia beginning with a gangrenous pseudoangina. The most common se-



quence in children is, "diphtheria" with gangrenous tonsils, then "purpura hæmorrhagica," then enlargement of lymph glands, liver, and spleen, then "lymphatic leukaemia." In other cases, especially in adults, the sequence is, severe anæmia with intense pallor and extreme feebleness, then profuse hæmorrhages from nose, mouth, etc., then the purpura, and from the first a gradual enlargement of the lymph glands, liver, and spleen. In Lazarus's case the tonsils were covered by a purulent exudate containing staphylococci and streptococci. It is interesting that the cervical glands may become enlarged before the tonsillar signs appear, evidence against the primary nature of the latter lesion. Sometimes a hæmorrhage into the tonsil is the first sign. Gangrenous ulcers in the tonsil have been mistaken for luetic chancres. Adenoids are sometimes abundant in the posterior nares.

In addition to the purpuric cases is a group in which cutaneous lesions are the most striking features. It is possible that Mammaberg's case was one simulating lues rather than a maculo-papular syphilide which later became leukaemia. Holst reports a case with thickly studded, painless nodosities on the skin of the face, breast, and back, some even the size of a pea. Stevens' case is interesting since he thinks that the subcutaneous lymphocytic nodules which varied in size from a millet seed to a threepence in size, were chloromata. A discussion of the skin lesions is given by Aguiet and Ribadeau-Dumas.

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### VISCERAL ARTERIOSCLEROSIS.

The importance of proper blood supply to the activity of the internal organs need not be emphasized. What relation has arteriosclerosis to visceral arteriosclerosis? Brooks (*Bost. Med. and Surg. Jour.*, No. 9) read a paper on this subject. He regards the subject of visceral arteriosclerosis of sufficient merit to claim the attention of the clinicians generally. Sclerosis of the coronary and cerebral arteries with their disastrous results are well known, what about arteriosclerosis of the arteries supplying other organs? To quote:

"The visceral arteries are those of the 'medium' class as classified by the histologists, they are the trunks which have thick and well developed muscle coats. This heavy media is physiologically necessary since the blood supply to these organs must alternately be increased by the relaxation of the muscle and decreased during the physiological resting stage by the local contraction of this coat. As a result of this delicately balanced function, even relatively slight changes in any of the walls of these very active vessels hinder or limit the possibilities in these directions. Thus an alteration in the intima, even if it do not,

as in most cases, also extend to the media coat, causes an appreciable alteration in the caliber of the vessel when it contracts or expands. Most important of all, when the media or muscle coat becomes even slightly diseased, either by degenerative muscular alterations, by encroachments of interstitial hyperplasia or by true inflammatory exudate, the physiological relaxation and contraction, the entire control of nutritive vascular supply is interfered with and the organ may, as a result, become chronically congested, or perhaps habitually anemic. In either case the viscus becomes permanently damaged and is no longer able to properly maintain its functions and its physiological balance in the interreactions of the body. A disturbance of this equilibrium leads first to secondary changes in the immediately dependent organ and perhaps finally to lesions of the general viscera.

Furthermore, disease of the arterial walls in vessels of this class tends to alterations in the general blood pressure, probably in an attempt on the part of the body by an increase in the pressure to balance the blood distribution or to furnish a normal requisite amount of blood for the functional activity of the diseased organ, especially if it be of great vital importance as is the case with the heart or kidney. Elevation of the blood pressure, due apparently to local arterial disease, is particularly well illustrated in cases of arteriosclerotic or small, contracted kidney where the blood pressure is almost uniformly elevated, a fact for the full recognition of which we are chiefly indebted to Dr. Janeway.

As to the relative rate of occurrence in visceral arteriosclerosis analysis of my series of 400 cases of arteriosclerosis showed 368 in which the visceral arteries were mostly or exclusively involved. This rate of occurrence in itself demonstrates the importance of the consideration of the disease of these vessels. Analysis as to the relative distribution showed the coronary artery diseased in 270 of the 368 cases; the cerebral vessels were involved in 107 instances, the renal vessels in 81 cases, the pancreatic in 74, the hepatic in 43, the splenic in 35 and the spinal vessels in 20 cases, the pulmonary in 16, the celiac and its visceral branches in 19 and the mesenterics in 4."

The diagnosis of visceral arteriosclerosis presents difficulties which are sometimes almost insuperable. The author presents the symptoms in general as follows:

"Very briefly the most constant symptoms of visceral arteriosclerosis in any organ are, (*a*) depressed function, often spasmodic, but mostly evident when studied for long periods, (*b*) pain, also usually spasmodic and always of the anginal character, localized in the distribution affected and exemplified by that seen in angina pectoris, ery-

thromelalgia and Reynaud's disease, (c), also spasmodic elevation of blood pressure is an important but inconstant symptom.

Our diagnosis must as yet rely chiefly on the appearance of these symptoms coupled with a requisite history of etiological factors and the usual method of diagnosis of general arterio-sclerosis (largely by the inspection and palpation of the superficial arteries which are, as I have formerly stated, most unreliable in visceral arterio-sclerosis). Thus in my 400 cases the superficial vessels were involved but 154 times, and in 4 of these instances changes were not present to any appreciable degree in the internal visceral trunks, but were found only in the superficial vessels. Thus peripheral and oftentimes quite general arteriosclerosis may exist without involvement of the nutritive vessels of the important organs."

The treatment of arteriosclerosis is mostly preventive, that is, everything must be done to prevent the disease from growing worse. The first law is rest to that organ. He concludes as follows:

"General treatment is attended by benefit in nearly all instances. Thus the general lowering of the blood pressure when it is habitually high, either by local or general means, is often necessary. Potassium iodide and perhaps other forms of iodide as well, employed as general drugs, serve to prevent extension of the disease, as definitely shown by recent experiments; and also, in at least a certain class of cases, it tends to facilitate absorption of inflammatory and degenerative products in the vessel walls already diseased. This action of the iodides no doubt takes place quite independently of syphilitic disease, in which instance, of course, we all recognize the utility of the drug and that of its companion, mercury.

In conclusion, permit me to especially urge upon you the following points: First, the great frequency of visceral arterio-sclerosis and its importance, particularly in internal medicine. Second, the diagnoses, in many cases partly by exclusion, partly by its direct signs and symptoms and partly by the results attending treatment. Third, treatment which is attended with great benefit in a very considerable number of cases, but which must first be based on a close study of the special etiology, on a thorough appreciation of the physiology of the diseased organs and of the special idiosyncrasies of each instance and, finally, on a correct diagnosis."

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#### PRE-ICTERIC ITCHING.

David Riesman (*Amer. Med.*, February) writes on this practical subject and reports three cases. He introduces the article as follows:

In his clinical lectures Robert James Graves, the great Irish physician, reports two cases of itching preceding jaundice that are cited by nearly every succeeding writer who refers to the subject. The first case was that of a woman, aged 20, suddenly seized with pain in the right hypochondrium and epigastrium; three days later, and ten days before the jaundice appeared, she began to have excessive itching of the skin preventing sleep. This itching ceased with the advent of the jaundice. In the second case, that of a man laboring under a most severe jaundice, the itching preceded the jaundice by two months and subsided when the discoloration of the skin became established. Graves saw at once that these two cases were irreconcilable with the view that the itching in jaundice depends on a deposition of bile pigment in the skin. Hilton Fagge is authority for the statement that Thomas Addison once suggested that an attack of jaundice might be impending when a patient complained of itching, for which no explanation could be found; the prediction proved correct. Murchison, Budd, and Friedrichs mention pre-icteric itching, but cite no observations of their own, referring merely to the two cases of Graves. Quinke, Rolleston, and Osler also speak of it. According to Quinke, Herter attributes the itching to dryness of the skin. In a case of carcinoma of the ampulla of Vater reported by Havilland Hall, severe itching appeared one week before the jaundice, and in a similar case of Halsted's itching was the first symptom.

In the cases reported the itching preceded the icterus. He believes that the older view that the pruritus is due to a deposit of bile pigment in the skin can no longer be maintained. He concludes as follows:

1. Itching sometimes precedes the onset of jaundice by a variable length of time.
2. This itching may cease the moment jaundice is established, or it may continue indefinitely.
3. Itching, whether pre-icteric or icteric is not due to a deposit of bile pigment in the skin.
4. When itching exists for which no cause can be found, the liver as a possible factor should not be overlooked.
5. Pre-icteric itching is suggestive, though not pathognomonic, of the existence of malignant disease involving the liver or the biliary passages.

## CHRONIC ADHESIVE PERICARDITIS.

This disease is not so well known by practitioners and a review of the subject by Sicard (*N. Y. Med. Journ.*, March 16.) is timely. He introduces the subject thus:

"When a fibrinous exudate occurs in the pericardial cavity, the lymphatic masses are of differing size and strength, are at first mostly soft, friable, and easily broken by the cardiac movements; some may be absorbed with the rest of the lymphatic exudate, and some remain to become organized into connective tissue.

The exudate is first invaded by leucocytes, by connective tissue cells, and by newly formed blood vessels, all of which go to make up granulation tissue; as time goes on organization into connective tissue becomes more complete, and where the opposing surfaces are in contact, union of the two results. The most frequent site of adhesion is on the surface of the right ventricle, next the auricles, and lastly the left ventricle. Of the old adhesions, those at the apex may be long, thin threads, having been strung out by ventricular contraction, others have broken off and hang loosely in the pericardial cavity, while those at the base, where there is less movement, are apt to be thicker and denser. In cases where lymph has been excessive and organization complete, the pericardial surfaces may be entirely agglutinated with more or less thickening; in these cases the pericardial cavity is obliterated.

Secondary to the pericarditis we are apt to find cardiac hypertrophy and dilatation in varying degrees, sometimes slight, sometimes (when the adhesion is extensive) considerable, and when much thickening and stiffening result, enormous. Myocardial degeneration frequently occurs, often coronary sclerosis accompanies, and frequently chronic valvular disease, so that all factors may show in the circulatory embarrassment. Chronic pericarditis and granular kidney often occur together. The most extreme degree of dilatation occurs in the right ventricle; this is because the right ventricle being thinner walled than the left is more easily stretched, and frequently before it can regain its former tone or become hypertrophied, adhesions have formed which hold it firmly in its new position. In other cases the inflammation extends beyond the pericardium and includes adjacent objects, notably the pleura and the mediastinal structures."

He divides the cases in several groups according to the symptoms present:

"1. As before stated cases run a latent course and are only discovered upon the autopsy table. In these there may be more or less gen-



eral adhesion, but the synechia seem to have caused no trouble during life.

2. Not infrequently we find patients, sometimes young adults, in whom we discern during routine examination, a harsh, coarse, systolic murmur over the pulmonary, increased by pressure and by leaning forward; the second pulmonary sound is accentuated, the murmur is too harsh for a hemic bruit, there is no reason to think it transmitted across the sternum from the aorta, and the condition may or may not have caused symptoms. It seems to me that many of these cases have adhesions around the base of the heart.

3. In other cases there may be circulatory embarrassment, palpitation, irregularity, and intermission of the heart beats, sometimes precordial pain: these breaks in compensation cannot be ascribed to any exact cause, there is moderate general hypertrophy, sometimes tenderness over the base of the heart; auscultation reveals no murmur or friction sound to account for the cardiac change so that we can make only a tentative diagnosis, from the absence of any direct signs. Not infrequently, however, hearts of this character do have over the pulmonic area a harsh, sometimes grating, systolic murmur, increased by pressure and by leaning forward. The picture reminds one of chronic endocarditis with exacerbations but without direct evidence of endocarditis. The incompetency is due to myocardial degeneration.

4. Where there is adhesion between the outer surface of the pericardium and the neighboring structures, there is considerable enlargement of the heart with diffuse pulsation of the præcordium, and systolic retraction of the apex, which may be in the seventh space even in the anterior axillary line; there may also be retraction at the tenth or eleventh rib, behind where the diaphragm is attached. The adhesions fix the heart pretty firmly to the chest, so there is practically no movement of the apex to right or left, as the patient turns from one side to the other, in the recumbent position; Litten's sign disappears with obliteration of the pericardial cavity; there is a decided rebound or shock synchronous with the diastole, which can plainly be appreciated by the hand. Paradoxical pulse, which becomes feebler and slower during inspiration may be present; this effect upon the pulse is due to constriction of the great vessels during expansion of the lungs. Diastolic collapse of the cervical veins is not a sign of much importance. Cardiac dulness may reach to the second or even to the first rib and to a proportional distance either side of the sternum, due both to the size of the heart and to the amount of mediastinal tissue involved. Auscultation may reveal murmurs of chronic endocarditis, pleuropericarditis, or relative insufficiency; these latter are usually systolic, but Os-

ler and Hale White have called attention to presystolic murmurs as well.

5. Severe cases of mediastinopericarditis resemble the last group except that the mediastinal inflammation is more widespread, with consequently more serious changes in the abdominal viscera. The patients suffer from cyanosis and dyspnoea, and from constantly recurring ascites, as many as twenty or more tapplings being necessary sometimes. After the removal of the fluid, the liver is easily palpable. Increase in the size of the liver is owing mostly to passive congestion, due both to cardiac dilation and to obstruction of the vena cava by the pericardial and the perihepatic growth. The new tissue formed in the liver is seldom great in amount, and often not enough to account for the ascites by obstruction to the portal system of veins. The liver is sometimes nutmeg-like, the atrophic alteration being absent: occasionally, however, atrophic changes are present.

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## YESTERDAY AND TO-DAY

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### THE SKEIN OF YARN AS A TRUSS FOR INFANTS.

A skein of lamb's wool makes an excellent truss for young infants to be used in cases of inguinal hernia. Most all modern text books in pediatrics mention it. It was first recommended by W. Coates, Esq. To use his own words (sketch omitted). (*Med. Gaz.*, 1848):

The subjoined sketch represents a truss employed by a gudewife in my neighborhood; and its excellence is such that it is a duty to make it generally known. Horace tells us not to despise the teaching of the unlearned, for—

“Interdum vulgus rectum videt.”—*Epist.*

I have given this truss extensive trials: the result has uniformly been the radical cure of the disease. It consists, simply, of a skein of lamb's wool; for infants, *Berlin wool* is preferable; this encircles the pelvis, one end is passed through the other at a point corresponding with the inguinal ring; the free end is carried between the thighs, and is fastened behind to that portion which forms the cincture.

This simple and cheap contrivance can be worn during the morning and evening ablutions, and then changed for a dry one; no attention is required on the part of the nurse, except at the moment of changing. With ordinary care in drying the skin, and the occasional application of magnesia or other nursery powders, I have never found the skin galled.

In cases of emergency this truss may be made available for adults: or rather, the modification of two silk handkerchiefs tied in a ring, which, as a *pis-aller*, is no more to be despised than is a garter and stick as a temporary tourniquet.

## MENSTRUATION AND PREGNANCY.

A blood discharge more or less resembling the menstrual flow may occur during pregnancy, as is well known. Such a case was reported by Hewitt (*Lancet*, 1858):

"Mary B., aged twenty-five, presented herself at the Samaritan Free Hospital in April last. She had been married for six years. The catamenia commenced at the age of twelve, and at first appeared every two months. After a suppression which lasted for six months, the discharge became regular at the age of fourteen, and continued so until after her marriage, the ordinary interval being a calendar month. She became pregnant for the first time rather less than six years ago, and was delivered of a healthy child, now alive. During this first pregnancy, however, it is stated that every fourteen days a bloody discharge occurred, lasting three or four days, and this periodic discharge persisted during the *whole period of gestation*. The discharge was rather paler than that observed before she became pregnant. The child was suckled for six months, and during lactation no trace of bloody discharge was noticed. A second pregnancy, attended with precisely the same phenomena, terminated favorably three years ago. The second child, also now alive, was suckled for fifteen months, and the catamenial discharge is habitually rather excessive in quantity, continuing usually six to seven days; it occasionally extends over twelve or thirteen, and this has been the case since she was married only.

There appeared no reason for disbelieving the facts of the case, as above stated, and as it was important to substantiate them as far as possible, further inquiries were made, the result of which confirmed the truth of the patient's account. From the birth of the second child up to seven months ago, she continued regular; after that time, symptoms of pregnancy were again observed—viz., morning sickness, pain in the legs and back, resembling those which occurred in her former pregnancies; but the catamenial discharge at the same time became irregular, the irregularity consisting, as in the former two instances, in its taking place about every fortnight. This latter circumstance, indeed, as she herself observed, was one which, from her former experience, led her to consider herself again pregnant. Four months ago the abdomen became swollen, and the breasts much enlarged and painful. Three weeks later, while walking in the street, she slipped upon a piece of orange-peel; and twelve hours afterwards, pains, like those of labor, supervened, and a fleshy substance was expelled from the vagina. From an examination of these and other facts related, it is evi-

dent that abortion then took place. The abdomen immediately diminished in size, and has remained very small ever since."

While it is not infrequent for a woman to menstruate once after conception, it is exceedingly rare for a menstruation to persist throughout pregnancy. Recurrent hemorrhage after conception should always be regarded as suspicious. It usually indicates some pathological condition. This may be extra-uterine pregnancy, cancer of the cervix, placenta previa, or fibroids growths. Repeated accidents may cause a return of a sanguinous flow. Hence, the rule should be to examine a woman carefully and repeatedly if she shows this abnormal symptom during pregnancy.

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### CHLOROFORM IN LABOR.

We can not refrain from calling the attention of the profession again to the great advantage of using inhalations of chloroform in labor. Of course this may appear trite, but inasmuch as some physicians are already becoming interested in the scopolamine-morphin, or the hyoscine-morphin, a procedure which is not so readily controlled and which has already been abandoned by most surgeons who have tried these drugs, it is necessary to stem the tide. Do not desert the older and tried methods for these new fads. Familiarity often breeds contempt. Read what Dr. Simpson said (*Lancet*, 1847):

Case 1 was a second labor, occurring a fortnight before the full time. Three hours and a half after the pains began, and when the os uteri was becoming well expanded, the inhalation of chloroform was commenced, and she immediately fell under its influence. Its action was kept up till the child was born, twenty-five minutes afterwards. She did not awake till after the placenta was removed, and then spoke of having "enjoyed a very comfortable sleep." She was not in any degree aware that the child was born; and when, in a few minutes, it was brought in from an adjoining room by the nurse, it was a matter of no small difficulty to persuade the astonished and delighted mother that the child presented to her was really her own infant. In her first confinement she had been three days in labor, and the infant had at last been removed by craniotomy.

Case 2.—Seen with Mr. Carmichael; a second labor; she began the chloroform inhalation before the dilatation of the os uteri was entirely completed; the child was expelled in fifty minutes afterwards. I kept her under the chloroform for a quarter of an hour, till the placenta was removed, the binder applied, and the body and bed-clothes were

arranged and adjusted. On awaking, she declared that she had been sleeping refreshingly; she was quite unaware that the child was born, till she suddenly heard it squalling at its first toilet in the next room. An hour afterwards, she declared she felt perfectly unfatigued, and not as if she had born a child at all. In her first or preceding confinement she had been in severe labor for twenty hours, followed by flooding. No hemorrhage on the present occasion.

Case 3.—Patient unmarried; a first labor; twins; the first child presented by the pelvis, the second with the hand and head. The chloroform was exhibited when the os uteri was nearly fully dilated; the passages speedily became greatly relaxed, (as has happened in other cases placed under its full influence,) and in a few pains the first child was born, assisted by traction. I broke the membranes of the second, pushed up the hand and secured the more complete presentation of the head; three pains expelled the child. The mother was then bound up, her clothes were changed, and she was lifted into another bed; during all this time she slept soundly on, and for a full hour afterwards, the chloroform acting in this as in other cases of its prolonged employment, as a soporific. The patient recollected nothing from the time of the first inhalations, and was greatly distressed when not one but two living children were brought in by the nurse to her. Dr. Christison, who was anxious to observe the effect of the chloroform upon the uterus, went along with me to this patient.

Case 4.—Primipara; of full habit; when the first examination was made, the passages were rigid, and the os uteri difficult to reach. Between six and seven hours after labor began, the patient, who was complaining much, was apathized with the chloroform. In about two hours afterwards the os uteri was fully dilated, and in four hours and a half after the inhalation was begun, a large child was expelled. The placenta was removed, and the patient bound up and dressed before she was allowed to awake. This patient required an unusual quantity of chloroform, and Dr. Williamson, who remained beside her, states to me, in his notes of the case "the handkerchief was moistened often, in order to keep up the soporific effect. On one occasion, I allowed her to emerge from this state for a short time, but on the accession of the first pain, she called out so loudly for the chloroform that it was necessary to pacify her by giving her some immediately. In all, four ounces of chloroform were used." Like the others, she was quite unconscious of what had gone on during her soporized state, and awoke altogether unaware that her child was born.

Case 5.—Second labor. This patient, after being some hours in labor, was brought to the Maternity Hospital. I saw her some time



afterwards, and found the first stage protracted by the right side of the cervix uteri being thick, cedematous, and undilatable. The inhalation of chloroform was begun, and the first stage was terminated in about a couple of hours. Two or three strong pains drove the child through the pelvic canal, and completed the second stage. Fifteen minutes in all elapsed from the termination of the first to the termination of the third stage, or the expulsion of the placenta. The patient was dressed, and moved into a dry bed, where she slept on for a short time without being conscious of her delivery.

Case 6.—Second labor. The patient—a person of small form and delicate constitution—bore her first child prematurely at the seventh month. After being six hours in labor, the os uteri was fully expanded, and the head well down in the pelvic cavity. For two hours subsequently it remained fixed in nearly the same position, and scarcely, if at all, advanced, although the pains were very distressing, and the patient becoming faint and exhausted. She entertained some mistaken religious feelings against ether or chloroform, which had made her object to the earlier use of the latter; but I now placed her under its influence. She lay, as usual, like a person soundly asleep under it, and I was now able, without any suffering on her part, to increase the intensity and force of each recurring pain, by exciting the uterus and abdominal muscles through pressure on the lower part of the vagina and perinaeum. The child was expelled in about fifteen minutes after the inhalation was commenced. In a few minutes she awoke to ask if it was really possible that her child had been born, and was overjoyed to be told that it was so. I have the conviction, that in this case the forceps would in all probability have been ultimately required, provided I had not been able to have interfered in the way mentioned. I might, it is true, have followed the same proceeding, though the patient was not in an anæsthetic state; but I could not have done so without inflicting great agony upon her.

Case 7.—A third labor: the patient had been twice before confined of dead premature children; once of twins, under the care of Mr. Stone of London; the second time of a single child under my charge. The liquor amnii began to escape about one o'clock, a. m., but without pains for some time. I saw her between three and four o'clock, with the pains commencing and the os uteri beginning to dilate. In two hours afterwards, the third stage was well advanced, and the pains becoming very severe, she had the chloroform exhibited to her, and slept soundly under its influence. In twenty minutes the child was born and cried very loudly without rousing the mother. In about twelve or fifteen minutes more she awoke as the application of the binder was

going on, and demanded if her child was really born and alive, as she thought she had some recollection of hearing the nurse say so. She was rejoiced beyond measure on her son being brought in and presented to her.

The cases which I have above detailed were all cases of natural labor, and required no special artificial assistance. In none of them did the inhalation of chloroform do harm of any kind to either mother or child—while it saved much maternal suffering and human pain. No woman could possibly make better recoveries than they have done and are doing—and no children could look healthier and more viable. I shall now state some operative and instrumental cases of labor in which I have used the inhalation of chloroform.

Case 8.—Fourth labor; the mother deformed, and the conjugate diameter of the brim of the pelvis contracted from the projection inwards and forwards of the promontory of the sacrum. Her first child was delivered by embryotomy; the second, by the long forceps; the third was small, and passed without artificial assistance. On the present occasion, after suffering slight pains during the whole night, labor set in with greater severity towards morning. After being in strong labor for some hours, she was seen first by Mr. Figg, and afterwards by Dr. Peddie, her ordinary medical attendant. I was called to see her about four o'clock, p. m. The pains were enormously powerful and straining, imparting to the mind the dread of the uterus rupturing under their influence; but the head of the child was still altogether above the brim, and only an edematous ridge of the scalp passed through the superior and contracted pelvic opening. The passages had become heated, the mother's pulse raised, etc., and Dr. Peddie had tried two different pairs of long forceps. After I arrived, he applied, with great skill, another pair of long forceps which I had with me, but it was found impossible to move the head in the least degree forwards. The urgency and power of the uterine contractions, the immobility of the head upon the brim of a deformed pelvis, and the state of the patient and of the parts, all showed the necessity of relief being obtained by artificial delivery. In her first labor, I had assisted Dr. Peddie in delivering her, under similar circumstances, by perforation of the head. But here the child's heart was heard distinctly with the stethoscope; and he at once agreed that I should try to deliver her by turning the infant, thus compressing and indenting the flexible skull of the fetus, instead of perforating it, and affording (as I have, for some time past, taught and believed) some chance of life to the child, and more chance of safety to the mother. The patient was placed under the influence of chloroform, still more deeply than when the forceps

were used. I passed up my hand into the uterus, seized a knee, and easily turned the infant, but very great exertion and pulling was required to extract the child's head, through the distorted brim. At last it passed, compressed and elongated. The child was still-born, but by applying the usual restorative means, it speedily began to breathe and cry; and when I called two days afterwards, I found both it and the mother well. The mother was utterly unconscious of aught that had occurred or been done while she was breathing the chloroform, and lay most passively still and asleep during the whole of the operative proceedings. She did not awake till about a quarter of an hour after her infant was born.

Case 9.—In the Maternity Hospital: first child. Labor began at ten p. m., (Nov. 21st.) I was desired to see her at six a. m., (2<sup>nd</sup>.) The os uteri was well dilated, but it was evident that the pelvic canal was contracted throughout, and the head was passing with unusual difficulty through the brim. The patient was complaining much of her sufferings. It was evident that it would be a very tedious, and probably, at last, an instrumental case, and one therefore calculated to test the length of time during which chloroform might be used.

She began to inhale it at a quarter past six a. m., and was kept under its influence till a quarter past seven p. m.—the date of her delivery,—thirteen hours in all. From the time it was begun to the time delivery was completed, her cries and complaints ceased, and she slept on soundly throughout the day. The bladder required to be emptied several times with the catheter. The head passed the os uteri at ten a. m., and during the day, gradually descended through the pelvis. At seven p. m., I at last deemed it proper to deliver her by the forceps; the head, which was now elongated and oedematous, having by that time rested for some hours against the contracted pelvic outlet, with little or no evidence of advancement; the bones of the fetal cranium overlapping each other, and the fetal heart becoming less strong and distinct in its pulsations. A warm-bath, irritation of the chest, etc., were necessary to excite full and perfect respiration in the infant. Whilst we were all busied with the infant, the mother lost some blood, but the placenta was immediately removed, and the uterus contracted perfectly. On afterwards measuring the quantity of blood lost, it was calculated to amount to fifteen or eighteen ounces. The mother's clothes were changed, she was bound up, and removed to a dry bed before she awoke. She had at first no idea that the child was born, and was in no respect conscious of being delivered. In fact she had been "sleeping" according to her own account, from the time she began the inhalation, and thought she remembered or dreamed that she heard Dr.

Williamson, the house-surgeon, speak near her once or twice. Dr. Beilby, Dr. Ziegler, etc., saw the case with me. Three days afterwards, I found the mother and child perfectly well. She continued to recover so rapidly, that she insisted on leaving the hospital on the tenth day after delivery.—*Lancet*, Dec. 11, 1847, p. 623.

## BOOK REVIEWS

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BIOGRAPHIC CLINICS. Volume IV and V. Essays concerning the influence of visual function, pathologic and physiologic, upon the health of patients. By George M. Gould, M. D. Editor of *American Medicine*, etc. Price of each, \$1.00. Philadelphia, P. Blakiston's Son & Co. 1012 Walnut St. 1907.

Every one who has studied this series of books "Biographic Clinics" can but be struck with admiration for the man who digs among the pages of the past and tries to recover some gems. His collection of symptoms described by great men are very interesting but his conclusions seem clearly to be warped by too great enthusiasm.

We value these works as a fine collection of material, but can not agree with his far reaching conclusions. If all the ills of literary men were due to eyestrain, the practice of medicine would surely be very much simplified and to be a writer the ideal existence, provided the individual wore the proper glasses.

In volume V the author considers at length the subject of eyestrain and gives the histories of numerous remarkable cases. He takes the opportunity to fling a few hard stones in the camp of the enemy—the neurologists.

But why this controversy? Dr. Gould should continue to relieve all cases of migraine and digestive disorder with glasses—continually report results and have his students do so. Then the neurologists will learn that all cases of migraine are due to eyestrain. We fear that nothing else will convince these gentlemen. Why should Dr. Gould be troubled about attacks on the validity of his conclusions when in spite of the enormous studies on the diseases of the stomach he writes: "Present-day gastrology, viewed as a specialty, seems in the majority of cases to be worse than a blunder." Such radical statements can be fought only with a sharp-edged sword. His sarcastic remarks concerning the ordinary rules of oculists are not calculated to make many friends.

But we must admire his tremendous enthusiasm and his undoubted faith in his own theories. Perhaps, he is ahead of his time.



ST. LOUIS

COURIER OF MEDICINE.

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EDITORIAL COMMENT

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THE ST. LOUIS COURIER OF MEDICINE AND THE INTER-  
STATE MEDICAL JOURNAL.

This is preeminently the age of unions. It takes no learned man to observe that aggregations of men and capital rule everywhere. It would be indeed strange if this tendency did not creep into the field of medical journalism. As a matter of fact this tendency permeates the medical thought of today. The past few years have witnessed many such combinations. The protest against too many medical journals is reaping some results, but greater still is that tendency to unite for greater strength, for more extended service.

No surprise, then, will be excited by the announcement that the *St. Louis Courier of Medicine* will henceforth cease to exist as a separate publication, but will be combined with the *Interstate Medical Journal* of St. Louis. By this union only benefit can accrue to the medical profession and to independent journalism. The old must give way to the new order of things and the *St. Louis Courier of Medicine* at the end of the thirty-sixth volume will end its independent existence.

To some of our friends, who have a tendency to venerate age, this may come as a shock, but in the new order of things the old will soon be forgotten as a faithful servant of the past. The expediency of the union is unquestionably strong, and in the *Interstate Medical Journal* the spirit of western medical journalism will continue to fight the demons of medical ignorance and quackery.

Subscribers to the *St. Louis Courier of Medicine* will henceforth receive the *Interstate Medical Journal*, a publication which we have always regarded as a most worthy competitor and whose pages every month reflect the highest truths of medical progress. *Valete.*

## FOMITES.

The stress laid upon fomites as the transmitters of disease is not so evident today as it was 10 years ago, when letters were fumigated to prevent the possibility of transmitting yellow fever. We know better now. Influenza has been put in the list of the diseases that can be conveyed from one person to another by means of some article of clothing, etc. We have heard of whooping cough being carried by means of an object, but we can find no reported case that can stand the test of clinical analysis. The Health Commissioner of St. Louis evidently believes that measles may be carried by a third person or books from a house in which the disease is present. We have been unable to find any proof for this. Even in scarlet fever the importance of fomites in transmitting the disease has been greatly overestimated. We are beginning to find mild scarlatinal anginas, cases of the disease unrecognized, which scatter the poison every where. Then a small lesion in the nose or on the mucus membrane of the convalescent is more dangerous than some article of clothing which has been in the sick room. Still, in this disease the poison is very tenacious of life and we should take no chances, but in the case of measles prophylactic measures based on unproven premises seem rather severe.

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SHOCK.

A few years ago Crile in this country made some careful experiments and concluded that in the state of shock the blood vessels are paralyzed throughout the whole circulatory system. He claimed that this was due to an exhaustion or break down of the vasomotor centers. Now Malcolm declares that Crile is entirely wrong, that the blood vessels are not relaxed but intensely contracted. The diminished blood pressure is not sufficient proof that a relaxation is present. He warns against the use of adrenalin, and believes that the intravenous injection of salt solution may do harm. He recommends the use of strychnina and warmth.

What is the practitioner to do when authorities can not agree on what appeared a definite principle?

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PSYCHOPATHOLOGY.

Boston is eminently distinguished for the number of students of psychology and psychopathology. It is there that the Lotzian philosophy has taken root and its branches ramify everywhere. For what is Christian Science but a pathological outgrowth of this philos-

phy and Bowne may yet have to answer some serious charges which may be placed against his teachings. From press reports we learn that Dr. Worcester, rector of Emanuel Protestant Church, has established a clinic, if it may be so called, for the cure of mental disease on the basis of true religion and his success so far has been very remarkable. He has a regular physician examine his patients to exclude organic disease which is treated in the ordinary way. His method is attracting wide attention in religious and medical circles and promises to become the beginning of a new movement.

In this connection we wish to call especial attention to a series of articles in "Studies in Psychopathology," by Boris Sidis (*Boston Medical and Surgical Journal*, March). The value of these studies must be determined in the future but standing as they are and accepting his findings in mental disease as accurate observations, we do not hesitate to pronounce them most remarkable. The influence of our subconscious self on our own activities is most remarkable. It seems, moreover, that even organic disease, or at least severe functional disturbances of the organs may be traced to impressions in childhood. "Likes and dislikes, however trivial, especially if they belong to the fundamental instincts, are not accidental matters of chance, with no reason or meaning—they can be traced \* \* \* to definite dissociated, subconscious activities."

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### MIASMATA.

The term miasm has almost disappeared from the nomenclature of modern pathology. There was a time when many diseases were connected with assumed noxious emanations. Infectious diseases having an obscure origin were almost invariably attributed to some poisonous gas. We all remember what a tremendous importance was attached to sewer gas as an etiological factor in the causation of typhoid and dysentery. Murchison very convincingly argued that typhoid fever was due to the emanations from decomposed feces or the feces from a typhoid fever patient. Septicemia was assumed to be caused by such emanations, and even Lister while recognizing the organic nature of the pathogenic virus believed, at first that they were transmitted through the air and therefore suggested the antiseptic spray. Malaria, of course, was pre-eminently a miasmatic disease due to noxious gases from decomposing vegetable matter. Yellow fever was believed to have a similar origin. Even pneumonia has been attributed to poisonous effluvia. But all these assumptions were wrong. Yet this concept persists in the minds of many physicians and in the

ideas of the laity it has as yet not been extinguished. It should, however, be allowed to die as many false medical hypotheses. Even in its newest sense—infectious particles or germs floating in the air—it is misleading.

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### CURRENT EDITORIAL TOPICS.

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#### THE GENERAL PRACTITIONER AND THE CLINICAL LABORATORY.

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The New York State Journal of Medicine (April) believes that we must return in a measure to the old system of preceptor and pupil, but the pupil should be a licensed and scientific physician. To quote:

"The time was when the practitioner of medicine worked independently and alone, jealous of his own knowledge and skill. The modern practitioner does not harbor this jealousy, but lives and works in an atmosphere of co-operation. We believe very strongly that the principles of reciprocity are to be still further amplified among practitioners of medicine. No better fortune can come to the young man, even though he has just finished an internship, than to begin his practice in close association with a well educated physician with a good sized clientele. The younger man should be his senior's assistant. His great value will be in the finer methods of clinical diagnosis. He also can give his attention to looking up the literature of cases which are being studied and to the investigation of the newest methods of treatment.

The equipment necessary for applying the modern methods of clinical diagnosis is neither formidable or out of the reach of the general practitioner."

The young men who are now sent out from our medical schools have been taught laboratory technic. The best conditions are served when the busy practitioner associates himself with some young man. To quote again:

"The same younger man may be associated with two or more physicians if one has not sufficient work to keep him busy. As the younger man becomes more and more engaged with general practice he will give less time to the laboratory, but it is surprising how habits of accuracy in diagnosis cling to a man who has once practiced them. It is also surprising how difficult it is for a man, who starts in practice "by the rule of thumb," to get away from his careless habits. About the worst thing that can happen to a young man is to enter immediately into a large and driving general practice before he has had a chance to get himself squarely oriented with regard to general

medical work. The best results are to be secured by gradually growing out of the clinical laboratory into general practice."

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### INFECTION FROM THE TRYPANOSOMES.

A few months ago the *New York Medical Journal* referred to a paper by Minchin, etc., who attempted to show that the transmission of trypanosoma gambiense was brought about from man to man by the soiling of the proboscis of the fly. In a recent editorial the work of Schaudinn is discussed who found the propagation of trypanosomes much more complex than first appeared.

"In entamoeba histolytica, for example, there is a sexual form of the organism with encystation. In examining large numbers of tsetse flies, Minchin (*Proceedings of the Royal Society*, February 22nd) discovered a process of encystation of trypanosoma Grayi in the proctodaeum of tsetse flies at Entebbe, Uganda. Organisms which are about to become encysted are very slender and are smaller than other forms of the same parasite. They have no distinct undulating membrane, and the flagellum is long and appears to run down the side of the body. The blepharoplast has the large size and rodlike form characteristic of trypanosoma Grayi, and the nucleus is either compact or broken up into granules of chromatin.

In the first stages of encystation the flagellum becomes shortened and stains more deeply, and the cyst wall appears as a layer of reddish substance forming a cap over the posterior extremity in specimens stained with Giemsa. The flagellum continues to shorten, and the cyst wall continues to increase, until the former is completely retracted and the latter has completely enveloped the body of the parasite in a pear shaped cyst. After the cyst is completely formed it is at first oval, then irregularly circular in outline.

Minchin suggests that these cysts are formed with the destiny of being accidentally swallowed by some vertebrate which is as yet an unknown host of trypanosoma Grayi. After development in the digestive tract of the new host it passes thence into the blood, to be again ingested by a tsetse fly. He suggests that there are two possible modes of infection in the dissemination of protozoan blood parasites by biting insects—first, the inoculative method, in which the parasites, after going through developmental changes in the insect, passes back again into a second vertebrate host through the proboscis, for example, malaria transmission; second, the contaminative method, in which the parasite taken up by the biting insect, after undergoing developmental changes within its large gut, passes out of it through



the anus and infects the vertebrate host by contaminating its food or drink.

Minchin suggests to those working on the subject of trypanosome infection the desirability of observations to determine whether or not there is a cycle within the insect which disseminates the parasites that results in a contaminative infection of the vertebrate host. The inoculative type of developmental cycle of the trypanosome has been carefully sought, but so far has escaped detection. It may be that the solution of the problem will follow studies along the line suggested by the authors of the paper mentioned.

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### THE MILK SITUATION IN NEW YORK.

The *Boston Medical and Surgical Journal* (March 21) editorially discusses the milk question especially in New York where much agitation on the pure milk question has been going on for some time. The discussion among physicians was inaugurated by a proposed measure to compel the pasteurization of milk by law. To quote:

Dr. Roby strongly condemned commercial pasteurization, in which the milk was raised for a few seconds only to a temperature of 150 degrees to 170 degrees F., and stated that in Rochester the rigid inspection of the sources of supply had proved a much more efficient means for securing milk. Dr. Freeman contended that the main effect of commercial pasteurization was to keep "dirty" milk from souring on the dealer's hands, and that even real pasteurization, in which the high temperature was maintained for a sufficient time in order to be effective, must be practised just before the milk is to be consumed. At the same time, he did not think that the excellent results obtained in Rochester from the use of raw milk carefully inspected could be expected in New York, for the reason that Rochester was a city of but 156,000 population, deriving its milk supply from a restricted territory and using it within twenty-four hours, while in the case of the immensely larger city of New York, the supply necessarily came from a very wide territory and, as regards much the greater part of it, from forty-eight to seventy-two hours elapsed before the milk was used. Dr. Park expressed the opinion that most of the scarlet fever among children came from direct contagion in school, and inasmuch as diphtheria was prevalent principally in the winter, at a time when the diphtheria bacillus would not develop in milk kept at the average temperature, he did not attribute a large amount of this disease to infected milk. As regards tuberculosis, he said that while it was true that perhaps 10 per cent. of the cattle

of the state were the subjects of tuberculous disease in one form or another, not 1 per cent. of these had nadder tuberculosis, from which alone, as had been shown, the milk could be seriously infected.

In the discussion which followed the reading of the papers, Dr. L. Emmett Holt emphasized the fact that the city certainly could not wipe out all contagious diseases by the remedy proposed for the milk supply. In concluding his remarks he said, "As a matter of fact, hardly a baby in New York is now fed raw milk from the bottle. The mother pasteurizes the milk at home, the proper place to do it. All the mothers in the tenements know how. I tried recently for a certain demonstration to find some babies in tenement families whose milk had not been properly heated before feeding, and I had to give up the job."

In the meanwhile, the City Board of Health has continued active in its efforts to improve the character of the milk supply and, at its regular meeting on March 13, passed an additional series of regulations on the subject. One of these requires that on Monday of each week, every creamery or milk station shipping milk or cream to New York shall furnish to the Health Department a report stating the existence or non-existence of any one of the following diseases in the households of persons employed in the collection or handling of milk, either at the creamery or at the farms or dairies supplying it: typhoid fever, tuberculosis, scarlet fever, diphtheria, dysentery or any other infectious disease. Another regulation requires the farmers and dairymen to make similar reports to the creameries every Saturday; and a third demands the exclusion from the handling of milk of any employee in whose family such disease develops until such time as a licensed physician certifies that there is no longer danger of carrying the infection. Included also in the regulations is one requiring that when typhoid fever or dysentery exists in the household of any employee, no water from any well or spring within 100 feet of a dairy shall be used in the barns or for cleaning milk utensils without the consent of the New York Health Department. Failure to comply with any of these rules is to be regarded as sufficient cause for excluding from the city the milk or cream of the offending station or creamery.

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### THE AMERICAN CLINIC.

That the clinics of medicine and surgery in the United States have developed since their inception along different lines from the clinics abroad, especially the German clinics, is a fact of which no proof is required. That as they now exist the American clinics af-

ford less opportunity and incentive for medical research, and the highest quality of clinical teaching is a condition which we believe most medical men who have seriously considered the situation will admit. Why is it that in America such are the conditions? Adequately to answer the query possibly the history of the foundation and growth of our hospitals and medical schools be outlined, yet without this the following explanation may be offered: The separation for the most part of university and medical school with the establishment of proprietary medical schools acted to divorce from our medical schools the university interests. Consequently the development of higher university teaching and the university spirit of research did not make itself felt to any great extent in the medical schools. Most hospitals, moreover, in this country were either independent of medical schools or were controlled by men who controlled the medical schools and whose relation to each was a business one,—proprietary medical schools, proprietary hospitals. Hospitals independent of medical schools were either municipal or state institutions or owned by private individuals, in each case managed by those who had no vital interest in medical education. From these conditions resulted an independent development of medical schools and hospitals from which America still suffers. The results of the independent development of university and medical school are rapidly disappearing with the closer union between them which is taking place on every side. Unfortunately, the union of school and hospital is developing far more slowly, and most of our hospitals are still in fact if not in name independent in organization and management. Such hospitals, exceedingly few in number as they are, in which there is no line of division from the medical school, show by their work that herein lies the key to the situation. The ideal clinic of surgery and medicine probably cannot exist in America except where there is an indivisible union between university, medical school and hospital with means to pay attracting salaries, clinical material to place at the disposal of teacher and student, and absolute freedom from all local conditions that might prevent the best man, wherever he live, from being called to positions in school and hospital. Under these conditions the highest type of medical teaching and medical research will be possible.

Such ideas seem to be in the minds of those who are shaping the future of the Harvard Medical School if we can judge from their published opinions. Abundant clinical material, Boston has, but this is not all that they desire. Abundant clinical material alone does not make an ideal clinic, and it is the latter for which Harvard is

striving. A conception of such an ideal clinic seems to have been lacking in some of those who have criticised the supposed clinical situation at Harvard, or perhaps these critics have failed to recognize that this ideal clinic does not exist in their own city. If that be true they, like the Harvard men, must awake to the necessities of the present, acknowledge squarely a defect in the organization of their clinics and set manfully to work to remove these defects.

The future will show where such clinics will arise. With their possession the medical schools so endowed will be years ahead of their competitors. Whether these clinics come in Boston, New York, Chicago or elsewhere is unimportant so far as the development of American medicine is concerned, but the city in which they develop first will hold prestige in America for medical education and research. Is this not a goal to stimulate the best endeavor of the medical men in every large city? Those in which already exists a medical school that is an integral part of a university have attained an advantage which should act as a heavy handicap against those not yet so well situated. Locally we believe that Boston has the opportunity to attain to this goal.—*Boston Medical and Surgical Journal*.

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#### FEDERAL INTEREST IN THE HEALTH OF THE PEOPLE.

The New York State Journal of Medicine (April) has an interesting article on the above topic. A strong plea for the centralization of authority in medical matters is made. If the vast power of the government were turned in the direction of eradicating tuberculosis, for example, what great good might result. To quote:

"During the coming year, some 1,700,000 people are destined to die in the United States. The Government is spending money on the study of infusoria dredged from the bottom of the sea, it is doing all that it can for the protection of the trees and pigs from disease, and it is devoting vast sums of money to study and protect from diseases clams, lobsters, and shad—all of which is most commendable—but while the interests of these things are represented in the Cabinet of the president, our own may sicken and die of disease which governmental authority might prevent, while the Government whose function it is to protect us takes no cognizance of our plight. What shall the historians of future peoples say of the Government which concerns itself more with tuberculosis in cows than in men? In the United States of America a sheep with anthrax receives the attentions of a secretary of the Cabinet, but a whole community of men might have this disease and there is no secretary to interest himself

for them nor to preserve the well. There are a thousand men in this country as capable of doing for us as was Pasteur for France—I cannot say the opportunities would be as great. We could have their time at the rate of the pay of a colonel of infantry. Does anyone believe that it would not be a good investment for the Government to encourage the study of human health and diseases?

According to our last statistics we may calculate that during the present year about five millions of our population will be constantly sick, which means that continuously over four million families, representing twenty-five million persons, will be affected by sickness. What affairs of state are more important to this one-third of the population of the country? What does the secretary of the treasury do for them? What burden can the secretary of war lift from their aching hearts? How can the attorney-general assuage their grief? What does the postmaster general do to reduce the frightful morbidity? And the secretary of the navy? and the secretary of the interior? and the secretary of agriculture?"

The general government and not the states should control sanitary matters. The milk problem will never be solved satisfactorily until there is federal supervision of the country's milk supply.

"The wonder is that so much time has elapsed without this great country awakening to the appreciation of the advantages of a central department of sanitation, presided over by a sanitary general. Why has it not been one? The reasons are various: Lack of unity on the part of the medical profession; lack of knowledge of the capabilities of medical science on the part of the public; and a prevalence of the general notion that the object and function of the doctor is to attempt to cure diseases with medicines more or less noxious, to deliver parturient women, and to perform the wonders of surgical leg-*gerde-main*. When the statesman is confronted by a question involving the medical profession, there comes to his mind at once the representative of that profession, hastening through the streets on one or another of these errands. If he has ever sat upon the bench or practiced in courts of law he has seen this same doctor swear to something which his brother physician swore was not true. This has given him a one-sided view of the meaning of medicine; and it is most unfortunate that this one-sided view prevails in our legislative halls. Many of the men who draft our laws are of that class which most readily takes up with the therapeutic fads. This is not because of any particular virtue which they discover in these fads so much as because of the fact that they claim to be different from the regular practice of medicine. The ignorance of the meaning and mission



of medicine, displayed by our public servants in high places, is a matter of notorious and egregiously lamentable evidence.

The remedy lies in education—education not only of the public but also of the medical profession. The medical professions will not be understood and properly respected by the public until the doctor understands and respects his brother, and until his brother is in every way entitled to his respect; and, happily, we are working towards this end. The time surely is coming. It requires no extraordinary insight to peer into the future and behold the position of exalted importance which medicine is destined to occupy. It shall be more honored than any of the avocations of men. Its administrations shall be more kind and its results more beneficent than philanthropy itself. It shall stand between the living and the dead, and men shall call its mission holy."

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### THE WEIGHT OF THE SOUL.

The Roman satirist asks:

*Expende Annibalem: quot libras in duce summo invenies?*

No one, so far as we know, has furnished an answer; but this may be only because no American investigator has found an opportunity of weighing the mighty Carthaginian's ashes. In the meantime, if we are to believe the newspapers, five physicians of Boston, that "Omphalos" of the intellectual world, have done something more: they have succeeded in determining the weight of the human soul. The problem is said to have been solved by the simple plan of weighing a number of persons immediately before and after death. Our antivivisectionist friends will, we are sure, be shocked to hear that the experiment was first tried on dogs, which were found to weigh exactly the same when dead as when alive, and therefore, we suppose, must be held to have no soul. On the other hand, the human subjects always weighed from half an ounce to an ounce less in death than they did in life. *Argal*, according to the wise men of Boston, we must conclude that the soul weighs from a thirty-second to a sixteenth of a pound. We presume the difference in the weight of souls is to be accounted for by the degree to which they are burdened by sin or whatever other disturbing factor has taken its place in advanced philosophy; if this be the case, it would be interesting to determine whether there is any loss of weight in the bodies of Christian Scientists for whom sin has no existence. Possibly, however, the weight of the soul may be in proportion to that of the body, there being so many factions of a centigram

of the *divine particula aerai* to each kilo of body weight. The experiments of the Boston physicians suggest a number of interesting problems. If the soul has weight, it must be made of material stuff; it must have dimensions, and a more or less definite form. There are, we believe, clairvoyants who profess to see the color of the soul, and to be able in this way to distinguish the just from the unjust. But the dimensions of the soul are still, like those of Justice Shallow, to any thick sight invisible. Now that the soul has been placed in the balance, it is to be expected that it will soon be subjected to the Roentgen rays, which will reveal not only its dimensions but its habitat. Descartes, as we know, localized it in the pineal glands, that being in his view the only part of the brain which was not double. Here we venture with the greatest deference to hint a doubt as to the entire accuracy of some remarkable information which the ever-enterprising *Tribune* professes to have obtained from "one of the best-known doctors in London, holding a high official position." This authority is said to have told our confiding contemporary that "the generally-accepted location of the soul by students of anatomy is what is known as the pineal (*sic*) gland, which is situated near the brain, and was discovered by Dr. Philippe Pinel, a French physician (1745-1826), who gained world-wide fame by his reformation of the old barbarous methods of treating the insane." It is thoughtfully added that in works on anatomy nothing is said of any matter leaving this gland on the death of its possessor. We do not know whether to assign the credit for his fine specimen of etymological and historical lore to the *Tribune* or to the oracle of which it sought counsel. We are rather inclined to think that the pundit must have been pulling our contemporary's leg, a member which seems to offer a tempting subject for the experiments of the practical joker. We hope the American physicians will push their researches to the point of finding an answer to the question of Augustus to his soul when on the point of leaving him, *Quae nunc abibis in loca?* That is the thing which most interests mankind. But perhaps it might be well for them before going further to revolve in their minds and consider in all its bearing the famous problem with which Charles the Second puzzled the Royal Society.—*Brit. Medical Journal*, March 23.

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WANTED.—A position as house physician with salary attached by a graduate in medicine with honors, who is also an accomplished pharmacist. Write to Dr. E. W. Saunders, 3003 Lafayette Ave., St. Louis Missouri.

## ORIGINAL ARTICLES

### KIDNEY CONGENITALLY LOCATED IN THE PELVIS.

BY BYRON ROBINSON, M. D., CHICAGO.

During the past half dozen years I have been collecting illustrations from literature from museum and autopsy specimens of fused or horse-hoe kidney. Among my collections at present are the following four rare illustrations. During the blooming of renal and ureteral surgery anomalies are of vital interest to the physician.

The factors of signification in kidney and ureteral anomaly are 1. *Physiology*—its function. An anomalous kidney. Position can not be characterized by function. 2. *Anatomy*—its relation to adjacent viscera e. g., during gestation and parturition. Anomalous kidney positions may interfere mechanically with other viscera. 3. *Pathology*. Dislocated kidney may be particularly liable to trauma, especially during gestation and parturition. 4. *Clinically* the fused or dislocated kidney is of vast signification in diagnosis. It must be differentiated from other masses, neoplasm or organs e. g., the spleen. 5. *Surgical*. The anomalous position of the kidney is of extreme importance in surgical procedure on account of: (a) fusion; (b) multiple vessels; (c) relation to the major abdominal vessels (d) the renal isthmus. The following 4 anomalous pelvic renal positions may be of interest

#### FUSED OR HORSESHOE KIDNEY LOCATED IN THE PELVIS.

Fig. 1. This compound kidney rested in the hollow of the sacrum. Hence bears no relation to the aorta or vena cava. A sketch of this illustration was kindly sent to me by Dr. A. M. Cartledge, of Louisville, Kentucky, from a patient on whom he had performed an operation. The patient was an adult male and alive two years subsequent to the operation. The ureters were about 5 inches in length and arose dorsal to the renal isthmus. If this patient were a woman mechanical difficulties might arise during gestation and parturition.

#### A THIRD KIDNEY IN THE PELVIS WITH RIGHT URETERAL DUPLICITY.

Fig. 2. This is an illustration of an infant which possessed a third kidney located in the pelvis. The third kidney located in the pelvis is shown in the illustration presenting its median surface, i. e., the ureteral pelvis (2) lying in the sinus renalis. The specimen was

presented by Dr. John Neill to the pathologic museum of McGill Medical School from which I secured the illustration. The larger specimen presents a dorsal view and a duplicate right ureter.

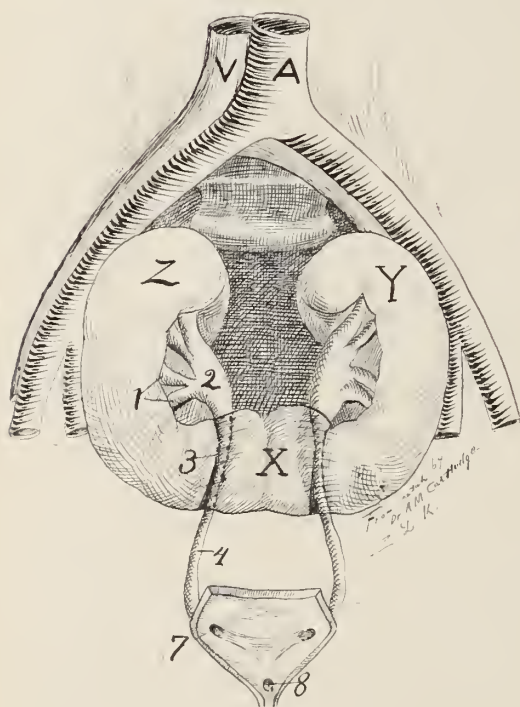


Fig. I.

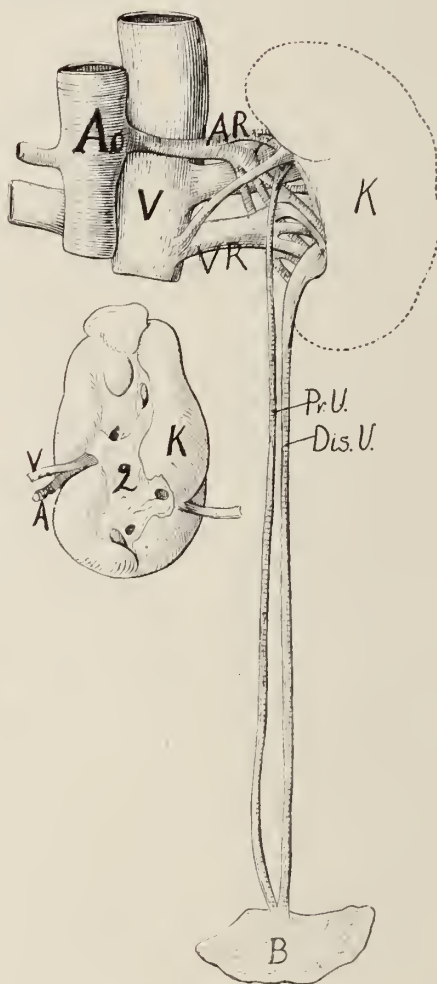


Fig. II.

Fig. 3. This illustration presents a rare condition. The left kidney is dislocated and is located on the surface of the sacrum. A, Aorta; A rd., right arteria renalis (duplicate); Rd., right kidney; u.r., right ureter; R. R. s., left renal vein; A Ar., left adrenal artery; A rs., left renal artery; Rs., left kidney; us., left ureter. (Illustration from Rayer).

## KIDNEY DISLOCATED IN THE PELVIS.

Fig. 4. This illustration presents a right kidney dislocated and located in the lesser pelvis. Its form, surface, contour, multiple arteries suggest an arrest of development. It would create mechanical

FIG. 98.

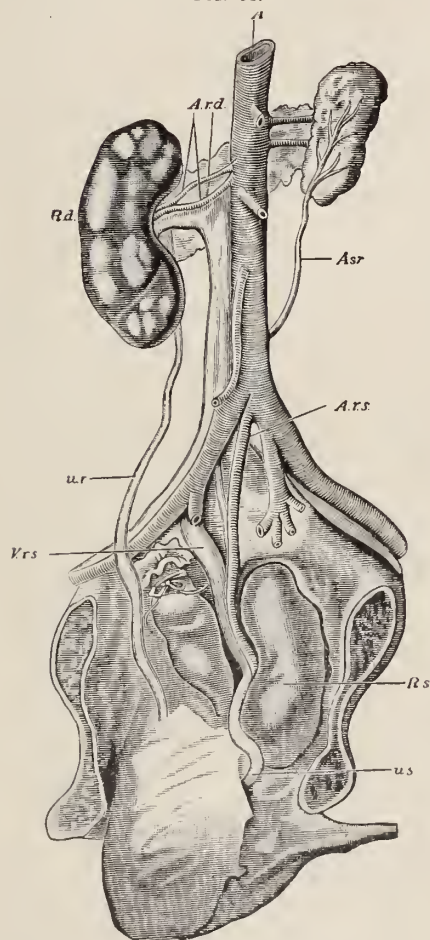


Fig. III.

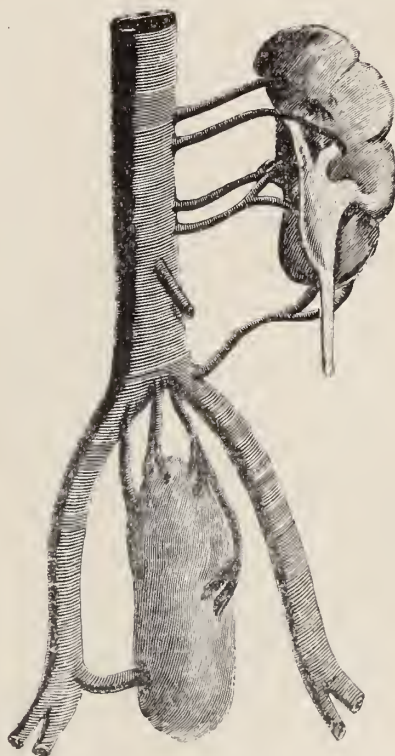


Fig. IV.

difficulties during gestation and parturition. The left kidney is rotated possessing a ventral hilum. (The illustration is from A. H. Young and Peter Thompson).



## MUNICIPAL CONTROL OF MEASLES.\*

BY JOHN ZAHORSKY, M. D., ST. LOUIS.

No one who has examined the statistics of the morbidity and mortality due to measles can doubt that this disease really is one of serious import to childhood. On account of its wide-spread ravages and its tendency to predispose to complications the death rate of the disease is considerable. Howard Jones, a few years ago declared that 1,300 deaths occurred from measles annually in England and Wales. Dr. Thomson in describing an epidemic in an English town gave a mortality of 1.7 per cent. in all cases. In institutions and hospitals the death rate may be much higher, even up to 50 per cent. has been reported from several places.

In my own private practice I would estimate the mortality in the last ten years as not over 0.5 per cent. The ordinary reports of the Health Department are worthless to estimate the death rate since probably not more than half of the cases are reported. In the Report of the Michigan State Board of Health (1903) there were 131 deaths in 4,493 cases or a mortality of less than 1-3 per cent. In rural districts as a rule the death rate is very small.

In studying the death rate in regard to the age of the patients it has been found that 63 to 75% of deaths occur in children under five years of age. Howard Jones (*Lancet*, 1904) declared that 90 to 95 per cent. of deaths from measles occur in children under five years of age. The smallest death rate, a fraction of 1 per cent., occurs in children from 6 to 15 years of age.

It is obvious, therefore, that the mortality of this disease is considerable and any city or community should consider prophylactic measures seriously. But what can be accomplished in this direction? Listen to the unqualified statement of the secretary of the Michigan State Board of Health. (Report of 1904).

"There are two erroneous and very harmful beliefs, quite prevalent among parents,—that measles cannot ultimately be escaped any more than teething, and that the least dangerous time for persons to have the disease is while quite young children. Whatever ground there may be for these beliefs elsewhere, reports to this office show that none exists in Michigan; but that, on the contrary, facts bear evidence that measles is a preventable disease and that it is more fatal to very young children than to persons in youth and middle age."

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\*Read before the Bethesda Pediatric Society, May 24, 1907.

I am not aware that parents generally believe that measles is mildest in the very young; in fact, statistics from all sources plainly tell that the greatest death rate is in children under five years of age. On the other hand, the death rate increases as the individual passes 30 years of age and is very fatal again in old age. The writer offers no proof that the majority of any community can pass through life without an attack of measles. In fact, we must imagine any community in a dangerous condition, the majority of whose adults are non-immune. Witness the terrible epidemics which have occurred in some of the South Sea Islands. While the white people, no doubt, have an inherited greater resistance to the disease, we have no reason to doubt that a few generations without measles might make us equally vulnerable to the disease. Furthermore, having the disease in adult life subjects the individual to greater annoyance. You all know examples when the mother was sick with measles at the same time as the children. You have seen young men on whom the family depended for support, sick for two weeks with measles. For economic reasons it is better that each person have his attack of measles in childhood or adolescence.

Furthermore, there is no proof that age confers any degree of immunity; as for scarlet fever or diphtheria. On the contrary, the general experience is that the adult is just as susceptible as the child. Hence, I hold that any community, all adults of which are immune to measles, is in better condition than one in which the vast majority of the persons are not immune.

Unless some future researches should upset this principle, we must regard all efforts to stamp out measles entirely of doubtful value in the end, even if successful. A municipality should make great efforts to keep children under five years of age from getting the disease, not to stamp out an epidemic unless other diseases are present at the same time.

Can an epidemic be controlled? The reports from Michigan clearly show that isolation and disinfection can accomplish this to a certain degree. In comparing epidemics which were neglected with those in which prompt isolation and disinfection was done it was found that while the former averaged about 43 cases to each outbreak the latter only 3 cases. In the former the death rate was about 0.4 of 1 case to each outbreak; in the latter, only 0.2 case in each outbreak.

These figures were taken from small rural communities and to compare them with the conditions possible in a large city is hardly fair. Moreover there is one fallacy in these figures which should not be overlooked, and that is, that any district or town will have fewer

outbreaks, the greater the number of immunes among the children. Diminishing the number of cases in each epidemic only multiplies the possibility of a greater number of epidemics. In the end the results will be practically the same.

It seems to me, therefore, that those fine tables collected by the Michigan State Board of Health really show nothing definite on the subject. Statistics for one or two generations would have to be gathered before it could be established that prompt isolation and disinfection really diminished the death rate from measles. The death rate of 5.6 deaths per 100,000 population would probably hold even in spite of these preventive measures.

To return to our former principle, it may be repeated again,—the Board of Health should make a strong effort to diminish the morbidity from measles among the children under five years of age.

How is this to be done?

It is scarcely necessary to point out here that the great difficulty in the control of measles is the fact that the disease is not recognized during the first two or three days of the stage of invasion, a period when it is very contagious. During this time the child mingles with other children and thus the disease is disseminated. Examples of the extreme contagiousness of measles in this stage abound in literature. I will give briefly an example from my own practice:

A little girl, about eight years of age, attended a birthday party one Saturday afternoon. The mother noticed nothing wrong with her. That night she had fever which the parents attributed to overindulgence in eating at the party. Two days later I saw her and the presence of Koplik's spots and acute catarrhal symptoms of the upper air passages made the diagnosis of measles easy. About one dozen children attended the party and to my knowledge at least seven of these were attacked by measles about ten or twelve days after this party.

Another difficulty in the control of measles is our ignorance of its mode of transmission. It has been assumed that the causative agent is discharged in the act of sneezing or coughing and is then inhaled by others. Whether or not the fine scabs from the skin are contagious has not been definitely proven to my knowledge. Contact seems to embrace the chances of transmission. Conveyance of the disease by fomites must be a very rare occurrence and is thought never to occur by some authorities. At any rate transference by a third person may be almost entirely ignored by the municipal regulations.

We do not know how long the causative agent clings to the patient after convalescence. We do not know how long before an infected dwelling is safe again. Clinical experience abundantly shows

that the pathogenic agent of measles is not tenacious of life and is quickly destroyed by drying, oxygen and light. In the present state of our knowledge there seems no good reason for spending time and money on fumigations. Two days airing of a room is probably more effective than formaldehyde vapor.

There can be no question that every case of measles should be reported to the Health Department. How else can the municipal authorities combat any disease unless they know of its existence? So, too, it can do no harm and may do much good to have every residence, in which one or more cases of measles exist, placarded in the usual way. The placard should preferably be of a different color from that used in scarlet fever and diphtheria. It should merely be a notice to outsiders that measles exists on the premises. But quarantine should not be enforced. It discommodes the household and can do little good. No one coming in and out of the house is likely to carry the poison elsewhere.

Taking the guiding rule that children under five years of age should not have the disease, what rules can be formulated to prevent their infection at this early age? I would suggest the following:

Every physician should notify the Health Department of every case of measles. He should also state how long the disease has existed and whether or not the child attends school. If so, the Health Department should ascertain if the child has attended the school during the invasion stage. When such a child has mingled with other children during the stage of invasion, the health department should send the following notice to every parent who has children in that school:

"You are hereby notified that measles has occurred in the school which your child is attending. Please fill out the enclosed blank and mail to us promptly so that we may take the proper steps for the eradication of the disease.

The enclosed blank should contain questions as to the number and age of the children in the family, the number attending school and which of them have had measles. A physician's certificate as to the alleged immunity may be required. From these data the Board of Health can make a more intelligent fight against measles as it concerns young children. Non-immune children who have younger brothers and sisters at home must be excluded from school until the family has given satisfactory proof that the little children have been isolated from those attending school. Immune children should not be excluded from school.

When there is no young child in the family the child should not be excluded from school whether immune or not. Of course, to make

this system of prophylaxis really effective, school inspection should be instituted in that particular school. Every child should be examined daily for evidence of measles.

The present method has serious defects. Excluding all the children of a family from school often causes deception on the part of the parent. Thus to my own knowledge two families recently failed to send for me when a disease broke out in the family which was presumably measles, because they knew I would report the case and all their children would be excluded from school.

In another family there were four children, two going to school. These latter had measles and yet were excluded from school while the other two went through measles one after the other which took altogether four weeks. Is this treating families right, when we have so little evidence that fomites can convey the disease?

The present procedure in contagious diseases is probably the best in cases of diphtheria, scarlet fever or smallpox. But in the case of measles it is inadequate, useless and unscientific. I regard the figures, published to corroborate the efficacy of isolation and fumigation as fallacious. To test such methods properly a comparison with the immune and non-immunes must be made. This has not been done.

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## LEADING ARTICLES

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### THE OPSONINS.

BY J. G. MUMFORD, M. D.

The past six months have seen a marked increase of interest in the use of opsonins for combating surgical infections, and a growing appreciation of the value of this remedy. One hears constantly inquiries as to the results being obtained, while there is still confusion in many minds regarding the nature of the agent, the technique of its production and the clinical indications for its use. It is well, therefore, to recall and summarize the facts briefly.

Opsonins are elements present in the normal blood, and their assigned function is to prepare invading bacteria for ingestion or destruction by the phagocytes in the blood. The word *opsonins* is somewhat fantastic when used in this connection, and is derived from the Greek *ὀψωνίω*, through the Latin *obsono*, I cater or purvey.

The proposition involved in the use of opsonins is by no means novel. In all time surgeons and laymen alike have recognized the fact that different individuals have different powers of resisting in-



fections, and that a particular individual's resisting powers vary at different times. Formerly men, in their ignorance, said of a susceptible person that there was something wrong with his blood, and they called for a "blood tonic." Later, with the furor and confidence which resulted from the introduction of antiseptics, the condition of the individual patient came to be little regarded by the unthinking. Now, the trend of surgical opinion, instructed by our better understanding of surgical physiology, is turning us back to a more careful study of "condition" in individual cases. We see that certain patients are poor subjects for surgical operations because their resistance is lowered for specific infections; we have learned that wounds suppurate, or heal slowly, for the same reason; we are able in the case of certain obscure internal infections to arrive at the correct diagnosis by a study of particular elements in the blood, so that we are enabled in many instances to remedy the peculiar faults of "condition"; and it is especially interesting to observe, in connection with the subject of this article, that individual patients are found to have their resistance lowered for special invading organisms, so that special measures must be taken in each case to fortify that patient's resisting powers. We cannot roughly immunize with an unlimited amount of living serum, as did Jenner against smallpox, but we must use carefully graded amounts of our remedy so as to meet individual conditions. Coupled with the thought of thus fortifying the blood to combat infections, we are recognizing, as clinicians and dealers in surgical therapeutics, that the quantity as well as the quality of the blood delivered at the point of invasion has an important bearing on the progress of an infection. A congestion of the affected part favors the inflammation which is resisting the invading organisms. This explains the value of poultices, blisters and other counterirritants, and is the basic idea in the Bier treatment by passive hyperemia. Briefly stated, we encourage an abundant blood and lymph flow through the infected area, and we aim to supply to that blood a supplementary element which shall enable it more vigorously to rout the bacteria. If necessary in the opinion of the surgeon, we supplement these measures by appropriate operations.

The use of opsonins deals with the second portion of this rather complex proposition. Most readers doubtless are familiar with the names and achievements of Wright and Douglas, the English investigators who developed further and brought to a practical working basis our knowledge of blood serum as it affects phagocytosis by leucocytes. This work was published in 1903. Previously Metchnikoff and his followers had taught that the leucocyte is the only element in

the blood, actively concerned in the phagocytosis of micro-organisms. Wright and Douglas demonstrated that leucocytes alone do not suffice for this germ-exterminating process,—the mere presence of leucocytes does not check a bacterial invasion; some other element in the serum is needed, that the leucocytes may be stimulated to beneficent activity. This other element is never entirely lacking, but it must be present in normal amount if the phagocytosis is to be effective. "The substance so essential to phagocytosis does not act upon the leucocytes (as a stimulant to the leucocytes for example), but it combines with the micro-organisms and prepares them for phagocytosis." This substance, or these substances, are the opsonins. It appears that they are carried in the lymph to the field invaded by micro-organisms, and that there they unite chemically with them, by which uniting process they render the organisms a ready prey for the leucocytes, so that a patient's power of resisting bacterial invasion is measured by the amount of opsonins present in any particular serum rather than by the mistimulated vital activity of the leucocytes.

These premises having been established, the practical surgeon asks how opsonins in sufficient amount may be supplied to a patient who lacks them. What are they, and how artificially may they be secured and employed? Wright and other investigators have shown that the desired substances, the opsonins, are produced by bacteria themselves; that in the case of every bacterial invasion a certain proportion of opsonins is produced, but that by a simple but ingenious laboratory technique, additional opsonins may be manufactured, so to speak, and may be employed as *vaccines* to supplement the deficiency in the patient's circulation.

Observe this important fact, that each form of infection requires for elimination its own appropriate opsonins. One may find in a given case a normal quantity of the opsonins required to combat a tuberculosis, but these are of no value if the patient be suffering from a staphylococcus invasion, with a diminished supply of the appropriate staphylococcus opsonins.

Briefly, then: in order to secure the proper opsonins, one takes cultures from the wound or discharges, sterilizes them at a temperature of 60° C., and from this product secures a vaccine to be used in the particular case.

What are the indications for the use of opsonins, and how shall one measure the amount and frequency of the dosage? This is an interesting question, and brings us to a brief statement of Wright's much misunderstood and much quoted *opsonic index*.

The *opsonic index* of a given patient is the relation between the

opsonins present in his serum and the opsonins present in the serum of a normal individual. For example, if we wish to measure the quantity of opsonins in the blood of a person suffering from boils, which are almost always due to the *staphylococcus pyogenes*, we need:

1. A few drops of blood from the patient, and a few drops from a normal individual. (From each sample of blood we can obtain easily serum enough.)

2. An emulsion of staphylococci in salt solution. (This may be prepared from a culture taken from the patient's own boils, or we may have it in stock.)

3. Leucocytes washed free from their plasma.

We mix equal quantities of the *patient's* serum with the staphylococci and the leucocytes, and place the mixture sealed in an incubator at 37° C. We then make another mixture of the blood from the *normal* individual with staphylococci and leucocytes, and place this mixture in an incubator. Both mixtures are incubated for fifteen minutes. The remainder of the investigation consists in examining under the microscope stained smears of these two mixtures, and observing the comparative action of the leucocytes upon the staphylococci in the two cases. If the mixture from the suspected patient shows leucocytes ingesting the same number of staphylococci as are ingested by the leucocytes in the normal mixture, we conclude that the patient's opsonic index is normal; but if the ingestion of leucocytes varies in the two specimens, we compare by figures the numbers ingested by the two sets of leucocytes and thus construct the patient's opsonic index. For example, taking the specimen of *patient's* serum: suppose we observe in it 40 leucocytes taking up 80 staphylococci,—we conclude justly that each leucocyte on the average takes up 2 micro-organisms. That is to say the "phagocytic index" of these leucocytes is 2. Observing now the *normal* serum mixture we see that 40 of its leucocytes take up 160 micro-organisms; from which we conclude the normal phagocytic index to be 4. From these two figures we can write the ratio, phagocytic index of the first specimen is to phagocytic index of the second specimen as 2:4; or, as 0.5:1.0.

For the sake of convenience the standard normal opsonic index has been set at 1.0; therefore the opsonic index of the patient under investigation is 0.5; and observe that this is his opsonic index for staphylococcus. So far as we know up to this point his opsonic index for other infecting organisms may be 1.0 or higher.

The value of the opsonic index has been questioned, and indeed there has seemed to be good reason for such questioning, because there is abundant opportunity for error through imperfect technique; and

we find, moreover, that the opsonic index of a given individual may vary from day to day. It is essential, therefore, in the first place that competent technicians do the work. I have seen in the laboratory half a dozen students find a wide variation of indices in identical specimens of blood.

The question, therefore, arises at once, Of what value is the estimation of the opsonic index in a given case? We have come to doubt its constant value, but a considerable experience, at least in this country, has brought us to believe that a series of observations on successive days will lead to a final judgment. For instance, in a case under the observation of the writer, an open wound was found to be doing well, the cultures showing numerous staphylococci pure, the opsonic index being 1.4—slightly above the normal. The next day the index was 1.2; and so it fell until it reached 0.75. Coincident with this fall in the opsonic index the patient's general condition gave cause for anxiety; the temperature crept up, the appetite failed and the wound began to look ugly. An injection of appropriate vaccines was then given, when, within twenty-four hours the temperature began steadily to fall and the other symptoms to improve. This case ran a long course with occasional increase in the severity of the symptoms. On each occasion the troublesome symptoms were found to coincide with a fall in the opsonic index; with every fall injections were given, and with each injection of vaccines the index rose from the neighborhood of 0.9 to the neighborhood of 1.4, with a corresponding improvement in the patient's condition.

We have thus outlined in general terms the manner of employing our opsonic remedy, but before this point was reached by the original investigators who had established their premises regarding the nature of opsonins, it was necessary for them to determine how to prepare the remedy. This was the all important therapeutic problem, and it was solved simply. Having determined by culture the nature of the organism or organisms which are causing the infection, one prepares a vaccine by inoculating a proper medium with the culture and obtaining the growth. The colonies are washed off in normal salt solution and sterilized at 60° C. for two hours. One has now a vaccine of unknown strength. This is standardized by diluting it with salt solution until each cubic centimeter contains a known number of organisms. For instance, the writer is using at present a streptococcus vaccine each cubic centimeter of which contains one hundred million organisms.

How is one to know the size of the dose to be employed in any given case? That is a question which is not yet altogether deter-

mined, but a considerable experience has taught us the safe average dose. We begin with that and work up to larger doses, guided by the reaction of the patient. The prepared vaccines may often be kept for many weeks or months even, as they are put up commonly in a weak solution of lysol. We are now encroaching, however, upon the field of technique, and the wide range of interesting special topics which this subject suggests to every reader.

A question which is frequently asked, and it is a practical question, is, How can the average busy practitioner employ these measures? Frankly, one cannot employ them unless he is in touch with a laboratory and laboratory workers especially equipped. The technique is laborious and time-consuming. Two or three cases may easily occupy all the time of one investigator, although it is becoming apparent that certain common infections, like boils and carbuncles, may be treated with stock vaccines kept for that purpose. Such rule-of-thumb work may answer in routine dispensary practice, but would be futile largely when one came to deal with more serious cases. Be it said, however, that average inoculations, even though given in error, are found to be harmless when given for localized infections.

There is the further question of the value of opsonins as a diagnostic agent. This is a matter which is still *sub judice*, though, as Ross states, certain general principles have emerged from the study of many cases:

1. Normal individuals not the subjects of any bacterial infection present a constant opsonic power to the various pathogenic bacteria. (This statement is still subject to question, probably on account of errors in technique.)

2. Individuals, the subjects of a strictly localized infection, due to any micro-organism, show a lowered opsonic index to that particular organism as compared with a normal person.

3. Individuals, the subject of systemic infection, show a high, or *fluctuating from high to low*, opsonic power.

This last condition of fluctuation is probably due to the "negative phase" and "positive phase" of which I have not yet spoken. The "negative phase" follows a vaccination for twenty-four hours. The index falls at first, and then ("positive phase") rises up to or above the normal. Ross quotes a case in illustration of the opsonic method as used in the diagnosis of an obscure case.

The patient entered the hospital with a provisional diagnosis of general tuberculosis. His tuberculo-opsonic index was found to be 1.0 (a figure slightly above the normal for tuberculosis,—an exception to the rule that 1.0 is normal). The physician suspecting the pos-



sibility of a gonococcal infection estimated the opsonic index to the gonococcus with the result that it was found to be twice normal, a condition of the blood which is almost certainly associated with a gonococcal infection only, and indicates that the patient's own infecting organisms were over-supplying him with opsonins. Further investigation confirmed the diagnosis of gonorrhea with a general infection.

Surgeons are not especially concerned, however, with infections of that type which fall within the province of the internist, though we are coming to feel that certain properly surgical affections are yielding hopeful results when subjected to opsonic therapy: *furunculosis*, *pustular acne*, *chronic empyemata* (after drainage), *cystitis*, and especially the various *wound infections* due to staphylococci and colon bacilli. In this community we are by no means convinced of the value of opsonic treatment in cases of tuberculous adenitis, although Wright makes positive claims in such cases. It was hoped at one time that various obscure and obstinate joint infections would show positive results from opsonic therapeutic and diagnostic measures, but although a few encouraging cases have been encountered we cannot feel as yet that positive results have been obtained. This is true not only of tuberculous joint lesions but of joint lesions due to other organisms, and the probable reason is that we have not yet been able to isolate and study some of the organisms which we assume to be the causative agents in many obscure cases of arthritis.—*Boston Medical and Surgical Journal*, March 28.

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## SURGERY OF TUBERCULAR PERITONITIS.

BY E. A. BABLER, M. D.

The distressing frequency and the devastating effects of tuberculosis explain the universal and painstaking researches which have, during the past few years, been accorded the important subject. To-day, it is common knowledge that the great white plague can be successfully combatted. Even the laity are becoming appreciative of the fact that *the secret of success lies in sanitation*.

One of the most interesting forms of tuberculosis with which the surgeon has to deal is tuberculosis of the peritoneum. When the peritoneum becomes infected with tubercle bacilli the pathologic findings are not constant: we may find the abdomen distended with a straw-colored fluid, and the peritoneum covered with miliary tubercles; in a second case there may be a dense, extensive matting of the intestines

with obliteration of all visceral outlines, and effacement of the normal peritoneal pockets; or the ulcerative form of the disease may be present. Winderlich and Mayo concur that the pathologic picture presented is dependent upon the purity of the infection and the resistance of the tissues involved. Winderlich studied 500 cases, and found the ascitic form of the disease present in 68 per cent, the fibroadhesive type in 27 per cent., and the purulent in 4 per cent. of the cases. A careful review of the literature shows the far greater frequency of the ascitic form—the purest type of tubercular peritonitis.

Tubercular peritonitis is almost invariably of secondary origin. In young children it is more probable that it is sometimes of primary origin. Infection usually takes place through a diseased appendix, Fallopian tube, perforated intestinal ulcer, or infected mesenteric glands. It is held that the tubal infections most frequently present the purest type of miliary with ascitis. The disease is of more frequent occurrence than we have been led to believe. Very recently, Bybee observed its presence in 30 of his 872 autopsies, while it was present in 2.7 per cent of the 3405 necropsy records studied by Cummins. Age is not a bar, although the disease is more frequently encountered between the second and fifth years, and between the twentieth and fortieth years. The contention that females are affected more often than males has been found erroneous. The statistics compiled by Bybee, Cummins, Vierordt, Seck, and others demonstrate clearly that males are affected far more frequently than are females, the proportion being four to one. It has recently been held that negroes are more often affected than whites.

The symptoms may be very misleading; they may be very acute, simulating those of acute appendicitis. Perhaps the most constant and impressive symptom is pain in the lower abdomen. Howard Kelly continues to pin a great deal of faith to the pain induced by urination and on walking. Mayo mentions the finding that it is not uncommon for patients with tubercular peritonitis to complain of more or less pain in the lower abdomen, which seems to be increased by peristalsis of the intestines, and is relieved when the abdomen increases in size with fluid, just as in cases with tubercular plenisy; with less fluid there is more abdominal rigidity, which latter may be of board-like character. In practically all of Bottomley's 26 cases of tubercular peritonitis the prominent symptoms were abdominal tenderness, emaciation, exhausting nausea, vomiting and disturbed intestinal function. The fever is of an irregular type; the patient may have a subnormal morning temperature, while the evening temperature ranges between 100° F and 103° F. The local manifestations

vary according to the form of tubercular peritonitis present, as well as the stage of the disease. Palpation may reveal presence of a friction rub: rectal palpation may detect tubercles in Douglas' pouch. The abdominal contour may be greatly distorted.

The diagnosis may remain obscure until exploring laparotomy has been performed. Dure says:

"In favor of tubercular peritonitis are the family history of tuberculosis; signs of the existence of other tubercular lesions; the history of frequent abortions or of the death of several children from tuberculosis; pelvic pains, menorrhagia, metrorrhagia, amenorrhea; or the previous occurrence of physical signs of a salpingo-oophoritis, which is the common origin of tubercular peritonitis."

Very recently Johnson has presented a valuable monograph upon the subject. He says: "There is no affection of the abdomen which may pursue a more latent course, and, without any warning, occasion a severe abdominal crisis, than tubercular peritonitis. From a clinical point of view, tubercular peritonitis is a peculiarly imitative disease; there is hardly any acute abdominal affection which it may not, in one of its unsuspected forms, simulate." The several private case reports presented by Johnson are not only very instructive but are worthy of special consideration. In one of the cases laparotomy revealed a large caseous gland pressing upon and strangulating a coil of small intestine by pushing it forward beneath a fibrous band; in another instance the exploratory laparotomy showed thrombosis in some part of the distribution of the mesenteric vessels, while in two other cases the obstruction was due to bands. Hill has reported a case of tubercular peritonitis in which obstruction occurred; laparotomy revealed a fibro-plastic condition, with the formation of a large, palpable mass. Laparotomy brought recovery.

It was my good fortune to assist Dr. Nietert, recently, in a very rare and interesting case. Laparotomy, which was performed for the relief of symptoms of acute appendicitis, revealed a tubercular peritonitis; a large, peculiarly-looking mass was found in the lower abdomen; close inspection brought the conviction that the cicatricial mass consisted of several coils of ileum which had become so matted together as to interfere with the passage of the intestinal content; the mass was excised and a Murphy button employed to anastomose the gut; the abdomen was closed without drainage. Examination of the mass revealed 33 inches of ileum; at the mid-point of the mass was a very dense annular stricture. It seemed certain that the condition had been brought about by the perforation of a tubercular ulcer of the ileum (Babler).

It is noteworthy that, although more than forty years have elapsed since Sir Spencer Wells unintentionally performed laparotomy in a case of tubercular peritonitis, and thus cured his patient, the treatment of the disease has remained practically unchanged. To-day we insist upon simple laparotomy with evacuation of the ascitic fluid and closure of abdomen without drainage, save in those cases in which it is possible to excise the primary focus, such as, the appendix, or the Fallopian tubes. Mayo Robson, Mayo, and the other more experienced surgeons concur that many of the recurrences following laparotomy have been due to the failure on the part of the surgeon to recognize and excise the diseased appendix, tube, etc. The fact that in tubercular Fallopian tubes the fimbriae are open and turned out is worthy of remembering.

It is very essential that very little damage be done to the diseased intestinal coils while removing the primary focus, since fistulae are very prone to follow, and are frequently responsible for a fatal issue. It is not, in the opinion of many prominent surgeons, necessary to excise tuberculous masses; Mayo finds that in many instances of tubal infection the mass can be pierced and its entire contents of caseating debris removed, leaving the outer fibres and peritoneal layer in situ, then applying iodine or iodoform emulsion in glycerin to the diseased area and closing the abdomen without drainage. In Mayo's 58 cases operated for removal of the tubes there were 56 recoveries and 2 deaths; in 27 cases of tubercular appendicitis there were no deaths.

Dalton has recently presented a careful review of the literature and reported several interesting cases. He prefers to make the right semilunar incision in males and the median incision when operating upon females. Hé agrees with Mayo that an tubercular appendicitis at an early stage, before miliary deposits appear, may at times be diagnosed at operation by the large size of glands of the mesentery. In one of Dalton's cases a caseous mass was pressing upon and producing obstruction of the common duct inducing symptoms of obstruction. Laparotomy produced cure. In another of Dalton's cases the patient was thought to be suffering from a carcinoma of the gall bladder; recovery followed laparotomy, although at the time of operation the case was regarded as hopeless.

Just how laparotomy without excision of the primary focus brings cure continues to remain a most interesting question. That laparotomy, with excision of the primary focus when possible will prevent many of the recurrences can not be questioned. It is more than probable that the percentage of permanent cures following laparotomy will in the very near future be far greater than previ-

ously. It can not, however, be possible, to cure all of the cases by laparotomy. Happily some of the cases do recover without the aid of physician or surgeon.

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## THE ROENTGEN RAY IN PRACTICE.

BY H. N. CHAPMAN, M. D.

The attitude of the general practitioner and surgeon to the x-ray is one of grave importance. We have heretofore sent our patients to the x-ray for therapy or diagnosis, very much as we might send them to the seaside feeling that if no good results, no harm can be done. It is time we aroused ourselves from this position, for very grave dangers exist to the patient from x-ray exposure and they are not to be lightly incurred. We know from experiments that men and women and animals submitted to the x-ray become sterile for a longer or shorter period of time, and if such a profound influence may be had on the tests and ovaries, it is not to be presumed that other organs will escape serious damage, especially, spleen, liver, pancreas and kidneys.

In the treatment of malignant growths, even though no vital organ be exposed to the path of the ray, great care must be exercised that the breaking down of the diseased tissue, and the throwing back of it into the circulation does not overload the kidneys and emunctories to such an extent as to almost destroy the patient's life. A case of this kind came under my observation several years ago, and the profound impression made will never be forgotten. It was a case of carcinoma of lower jaw, involving the bone, the swelling was very great: the patient was submitted daily to x-rays. After about fifteen exposures word was received that patient was too ill to report. I went to see him and found he had had a very severe chill in the night followed by some fever and very severe sweating and was then suffering from a colliquative diarrhœa and was profoundly depressed. Within eighteen hours after the chill the swelling of the jaw around the seat of the cancer had utterly disappeared leaving this side of his face of no greater size than the other. The severity of the reaction alarmed me, and taught me a lesson I shall never forget. The patient recovered from this attack but succumbed afterwards from the unimpeded ravages of the carcinoma.

In another case where a young lady was treated for superfluous hair on the arms, a severe reaction resulted followed by necrosis of tissue a slough three inches by one inch coming away leaving the peculiar slow healing ulcer, of horribly painful character, the severity of



which resulted finally in a nervous collapse which was not recovered from for a year. In this case the high frequency current from a glass vacuum tube and Oudin resonator connected with an induction machine applied to the ulcers and general treatment with induction machine hastened recovery remarkably.

(Incidentally I would say that the x-ray should never be used for the removal of superfluous hair.) A very timely article appears on this subject in *Journal A. M. A.*, Nov. 3, 1906, by Dr. Edsall, in which great stress is laid on the unnecessary exposure of patients to x-ray. Repeated examinations with the fluoroscope should be avoided. It is far safer to the patient and less tedious to take a radiograph of the part; and furthermore thus a permanent record is obtained. Of course every x-ray operator has seen numbers of cases where it seemed as though exposures might be made indefinitely with no lasting ill effect on the patient, but again we all have seen a more or less severe reaction after two exposures. So it behooves us to tread carefully this path. Every exposure should be done with careful screening of the parts not intended to be rayed; and no unnecessary exposures ever given the x-ray is certainly a two-edged sword and in the backward sweep of our weapon we may carelessly sever the cord of life of our patient.

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### SUDDEN DEATH IN DIPHTHERIA.

BY A. S. BLEYER, M. D.

Butruille *Jour. de Med. et Chir. Tome*, lxxvii, No. 20, has recently made an examination into the causes of sudden death in diphtheria, and points out that study must be directed to: pneumogastric nerve, bulb, heart muscle and heart vessels.

He is of the opinion that death from interference with heart action such as has often been observed in this disease, especially between the 8th and 15th day of convalescence, is sudden more in appearance than in reality. He believes that certain other signs usually exist which should many times give warning of approaching danger. Among these, are, precocious paralysis of the palate, palor of the body and face, immobility of the infant or sometimes an appearance of anguish, extreme agitation, modifications of the pulse (small, filiforme, accelerated, irregular, unequal) abdominal symptoms, anorexia, vomiting, oliguria with albuminuria or cylinduria. Above all dyspnoea following slight effort, vomiting, (even one time), and marked albuminuria, constitute danger signs.

Sudden death, he says, often occurs as an aggravation of such

signs as these. In 60% of these cases he finds that the angina had a slower course than usual, serum injections do not clear the throat as rapidly as in other cases, and often left a bleeding or ulcerated submucosa after removal of the membrane.

Butruille draws special attention to the state of the pulse after serum administration. The weakly and accelerated pulse should become slower and stronger after the effect of antitoxin becomes apparent, should such change fail to occur, the case may be regarded as grave. Again, should the pulse have become normal, a reappearance of tachycardia, especially with a normal temperature would be very unfavorable indeed, and often coincides with the development of a pharyngo-laryngeal or cardiac paralysis. A pulse rising to 160 is a very grave sign at this stage, that is, after the beneficent effect of the serum. (It will be noted that most authorities agree with these last statement, e. g., Barbier, Marfan, etc.)

The conclusion that can be drawn from Butruille's observations is, that an infant intoxicated by the poisons of diphtheria, showing marked adynamia, a rapid pulse of a variable character especially, that develops dyspnea on the slightest effort, should be given the most absolute quiet possible, there should be no physical or emotional jarring, no attempt at nasal or throat antiseptis, no unnecessary handling, nor talking, nor gavage. The author goes so far as to recommend a resting place constructed in gutter-shape, so that the little patient can not toss himself about. Constant attendance is imperative.

Let it be remembered furthermore, that the period of danger is very slow in passing away, it may be six weeks or longer. (These de Lille.)

As to the cause of death in these cases, really very little is known. Stanley (*Brit. Med. Jour.*, Dec. 26th, 1903) believes from clinical observations as well as from studying the autopsy records of various authors that the condition is due to a degeneration of the heart muscle, and not to any rapidly occurring cause. The degeneration is gradual and is preceded by a gradually increasing heart weakness.

From the records of five hundred cases of diphtheria, he finds that in four hundred and forty-six, there was lowered pulse tension, out of which number thirty died of heart failure. He does not believe that death can be due to a neuritis of the vagus.

## THERAPEUTIC NOTES

### THE THERAPEUTICS OF THE NATIONAL FORMULARY.

#### V.

#### DISEASES OF THE NERVOUS SYSTEM.

There is a decided tendency in the modern therapeutics of nervous diseases to get along without drugs. It is in this field that physical and mental therapy have reaped their most striking results. There are so many functional disorders of the nervous system amenable to suggestion, recreation, employment and physical labor that it is only rarely that resort should be had to chemicals. These patients so easily become addicted to narcotics and hypnotics, that the physician assumes a grave responsibility when he attempts to cure by means of such drugs. Nevertheless, the right dose (not doses) of medicine at the right time will often accomplish in a short time what other means of treatment require months or years to do. The National Formulary abundantly provides medicaments to treat a variety of diseases. Some of these we will mention. There are many diseases of the nervous system (e. g., infantile cerebral palsy) which are not influenced by medication and it will be useless, therefore, to discuss these here.

#### HEADACHE—MIGRAINE.

Much of the therapy connected with diseases of the nervous system is composed of measures that relieve pain. Probably, headache comes first in this list of pains. For this purpose it is customary to give some of the coal-tar anodynes, such as acetanilid, acetphenetid-in or antipyrine. These drugs act very well in ordinary nervous or congestive headaches. It should be remembered, however, that their continued use is not without danger and even a single dose may produce dangerous depression. It is, therefore, wise to use something else. In all cases an attempt must be made to discover the cause.

In the neuralgic varieties relief may often be obtained by applying the linimentum aconiti et chloroformi to the painful areas. The same preparation may be used in migraine. For immediate relief the following may be recommended:

R

Antipyrini .....	gr. lxxx
Elixir Sodii bromide, N. F.	
Elixir guaranae, N. F., aa.....	3 i

M. Sig. Desertspoonful for headache.  
Sometimes the salicylates act very well.

R

Elixir lithii salicylatis..... $\bar{3}$  ii

Sig. Dessertspoonful every three hours.

It is often best to combine several drugs. The following will be found useful:

R

Ammonii benzoat .....gr. lxxx

Elixir lithii salicylatis, N. F..... $\bar{3}$  ii

M. Sig. Teaspoonful every two hours.

It is a peculiar fact that effervescent mixtures give more prompt relief than ordinary mixtures. Probably the drug is more promptly absorbed. The following can safely be prescribed. In most simple headaches it will give prompt relief:

R

Pulv. potassii bromidi effervescentis cum caffeina, N. F..... $\bar{3}$  i

Sig. Take a heaping teaspoonful in half a glass of water.

This preparation contains about 10 grains of potassium bromide and 1 grain of caffeine in each heaping teaspoonful. If the headache is caused by indigestion, one or more doses of the following will give relief:

R

Pulv. pepsini compositi, N. F..... $\bar{3}$  ii

Sodii boro-benzoatis, N. F..... $\bar{3}$  iv

M. Sig. Take one half teaspoonful every 3 hours.

Saline laxatives are generally prescribed for headaches. A teaspoonful of pulvis salis Carolini factitii effervescens may be taken every two hours until the bowels move thoroughly. Many prefer to give a good mercurial, such as, the triplex pills of the National formulary.

In many forms of this trouble celery may be found very useful. A teaspoonful of the elixir apii graveolentis compositum may be given every hour until relief has been obtained. This preparation contains the fluid extracts of celery seed, coca, kola, and viburnum punifolium. The following may be used instead:

R

Fluid extracti apii graveol. N. F..... $\bar{3}$  ss

Elixir cocae et guaranae, N. F..... $\bar{3}$  ss

M. Sig. Teaspoonful every half hour until relieved.

Sometimes a hypnotic is all that is required and for this purpose the elixir paraldehydi may be given in one or two teaspoonful doses.

The prevention of migraine forms one of the hardest problems

of modern medicine. So many theories concerning the nature of this trouble have been offered and every theory predisposes to a new method of cure. Of course the eyes and nose should be carefully examined as to any abnormality. Some authorities urge that intestinal antiseptics be given, in combination with diuretics and laxatives.

R

Lithii salicylat ..... ʒ i  
 Salis Carolini artificii, N. F. .... ʒ iii

Sig. Twenty grains in half a glass of water to be taken before breakfast.

Sometimes the iodides given for a prolonged period diminish the number of attacks. A teaspoonful of the elixir corydalis compositum should be given three times daily in water. This preparation contains three grains of potassium iodide in each fluidrachm. It also contains corydalis, stillingia, xanthoxylum and iris.

#### NEURALGIA.

The medicines which give relief in headache are frequently beneficial in neuralgia. Here it need only be stated that the National Formulary has an antineuralgic pill on its list. Really, there are two of them.

R

Pilulos antineuralgicæ ..... No. xx  
 (Gross.)

Sig. One three times a day.

This preparation contains quinine, morphine, strychnine, arsenic trioxide and the extract of aconite. The well known Brown Sequard's antineuralgic pill is also given a place in the National Formulary.

External applications sometimes give marked relief in neuralgia.

In the intercostal variety the following is often used:

R

Camphor menthol ..... ʒ ss  
 Chloral camphoratum ..... ʒ ii  
 M. Sig. Apply with camel's hair brush over painful spots.

#### SCIATICA.

Internally, it is well to stimulate the kidneys by some good diuretic. A tablespoonful of the elixir potas acetatis et juniperi should be given three times a day. Sometimes the elixir pilocarpî is indicated. Tonics will often produce the best results.

R

Elixir quininae et phosphatum compositi, N. F. .... ʒ vi  
 Sig. Dessertspoonful after meals.

The ordinary anodynes are often found necessary. Salicylic acid may be tried.



R

Elixir acid salicylici ..... 3 iii

Sig. Teaspoonful in water every 3 hours.

External applications are often helpful. Hypodermatic injections along the course of the nerve may be used. Applications along the course of the nerve are sometimes beneficial. The relief given by the hot water bag is well known.

R

Linimenti tiglli compositi..... 3 ii

Sig. Apply along the course of the nerve.

In place of this the linimenti iodi may be used. The liniment of aconite and chloroform may also be prescribed.

## HYSTERIA.

In an ordinary acute attack of hysterical contracture or hysterical convulsions a good purgative will usually cure.

R

Pilulae colocynthidis compositae.

Sig. Take two at once.

Pills are often swallowed with difficulty, and a powder or liquid may be preferable.

R

Liquor magnesi sulphatis effervescentis.

One bottle.

Antispasmodics which may be used in this disorder are numerous in the National Formulary. Probably, the most popular is the elixir ammonii valerianatis which can be given every two or three hours until the symptoms are improved. A similar preparation is the elixir zinci valerianatis. These preparations are very valuable to treat an acute attack.

Valerian is found in combination in many other preparations which can be given as tonics to those suffering from hysteria.

Elixir ammonii valerianatis et quiniæ.

Elixir quiniæ valerianatis et strychninæ.

Elixir strychninæ valerianatis.

To quiet the nervous system the elixir humuli may be prescribed. A good tonic for the nervous system is often indicated. The elixir apii graveolentis compositus is probably harmless and will benefit many cases.

Mental influence should not be forgotten. It is especially in hysteria that suggestion reaps brilliant results. Good employment is very valuable. The individual who is intensely interested in some work will not have a nervous system which gets "out of gear."

In order to produce sleep the elixir calcii bromidi can be given.

## EPILEPSY.

The practitioner knows how disheartening are all efforts at treatment. Sometimes under some change in remedies or environment there happens a remarkable improvement which stimulates the patient for further therapeutic experiment. Many things bring about a temporary improvement, nothing cures. Yet there are cases which have been reported that have recovered. Just what has brought about this recovery is uncertain.

The bromides still remain the most efficacious drugs. The bromide of potassium will generally diminish the number of attacks; in some cases its effect is very gratifying. The bromides are very likely to disturb digestion and large doses may disturb the intellect. It is not customary at present to give the very large dose which was employed several years ago.

The plan of salt-starvation has many advocates and yet in the end it is doubtful that this measure aids in relieving the condition.

The bromides may conveniently be prescribed in the form of the elixirs recommended by the National Formulary, unless a large dose must be given.

R

Elixir potas bromidi, N. F.

Sig. A teaspoonful to a tablespoonful three times a day after meals.

Each teaspoonful of this article contains ten grains of potassium bromide.

It was Bechterew, if we remember correctly, who recommended that *adonis vernalis* be added to the bromides in the treatment of this disease. We suggest the following:

R

Fluidextracti adonidis, N. F. . . . . fl. ʒ i.

Elixir potassii bromidi, N. F. . . . . ʒ vi.

M. Sig. Teaspoonful three times a day.

Some clinicians get the best results by a combination of the bromides. The National Formulary provides for several forms and a prescription like the following may be given:

R

Elixir potassii bromidi, N. F. . . . . ʒ i.

Elixir calcii bromidi, N. F. . . . . ʒ ss.

Elixir ammonii bromidi, N. F. . . . . ʒ ss.

Elixir lithii bromidi, N. F. . . . . ʒ i.

M. Sig. Dessertspoonful three times a day.

Many practitioners prefer the bromide of soda since it is less irritating to the stomach.

R

Elixir sodii bromidi, N. F.

Sig. Teaspoonful to a tablespoonful three times a day.

When convulsions are due to syphilis potassium iodide should be given internally, or you can prescribe,

Liquor hydrargyri et potassii iodide, N. F. .... ʒi.

Sig. Five drops in water three times a day.

## CHOREA.

Chorea, like whooping cough, is an affection for which every practitioner wants something new. The salicylates have been highly recommended recently, but it is questionable that this is superior to the treatment by arsenic. Fowler's solution is the drug usually chosen to be given for this disease. The National Formulary has several preparations of arsenic which can be prescribed for St. Vitus' dance, the best of which probably is the liquor auri et arseni bromidi. The dose is about the same as Fowler's solution. A similar proprietary preparation has been highly exploited as a specific in chorea. Whether it is really superior to the solution of potassium arsenite has not been proven. Another article which may be used in chorea is the liquor potassii arsenitis et bromidi, or Clemens' solution. It contains ten per cent. of arsenic trioxide, U. S. P. Still another solution which has a similar action to Fowler's solution is the liquor sodii arsenatis, or Pearson's solution.

It is obvious that the practitioner has a variety of arsenical preparations from which to choose.

## LOCOMOTOR ATAXIA.

This disease should by no means be considered hopeless, although a complete cure is impossible. At the onset of the disease it may still be possible to eliminate the luetic poison which seems to be the primary cause of so many cases. At least, it is the most potent predisposing cause. Mercury is condemned by many clinicians; nevertheless, the practitioners will give some mercury with the iodides. As a tonic the arsenic preparations are frequently serviceable.

R

Liquor morphinae citratis, N. F.

Sig. Five drops three times a day.

In place of the iodides the elixir corydalis compositum may be ordered. For the pain some coal-tar anodyne may be useful. In many cases morphine is necessary.

Liquor morphinae cetratis, N. F.

Sig. Five drops in water every two hours until relieved.

This preparation contains two grains of morphine in each fluidrachm. In place of morphine the following may be used:

R

Sympus codinae, N. F.

Sig. One-half teaspoonful for pain.

Each fluidrachm of this contains one-half grain of codeine sulphate.

For the muscular twitchings the bromides are very efficacious.

R

Elixir sodii bromidi, N. F.

Sig. Teaspoonful three or four times a day.

The hypophosphites are also good tonics for this morbid condition.

R

Elixir hypophosphitum cum ferro, N. F.

Sig. Dessertspoonful three times a day.

or

R

Syrup ferri arsenatis, N. F.

Sig. Ten drops in water after meals.

When the disease is at a stand-still, exercise for the improvement of muscular coordination should be instituted.

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## IODINE AND SOME OF ITS USES IN SURGICAL WORK.

BY JOHN EDGERTON CANNADAY, M. D., SURGEON-IN-CHARGE SHELTERING ARMS HOSPITAL, HANSFORD, W. VA.

[An Abstract from *American Medicine*.]

Iodine is an exceedingly active substance chemically, and belongs to the halogen group. It possesses great affinities for many substances, and its exact use and sphere of action in the body are unknown. It enters largely into the composition of sea food and animals subsisting on this food contain their share of this evanescent substance. It makes the circuit of the body circulation in a short time and is eliminated in the saliva, urine and feces.

Senn, in his recent trip among the Esquimaux noted that iodine is liberally incorporated in the food of these people. He observed the remarkable absence of tumors of all sorts, the exceedingly benign course of syphilis, the absence of enlarged tonsils, lymphatic glands and goiter. He attributes this immunity to their use of iodized food. Sternberg, Senn, Koch, Schill, Fisher, Behring, Tavel and more recently Kinnaman, have emphasized the value of iodine as an antiseptic. It is certainly the most powerful as well as the least harmful germicide we possess.

Kinnaman has performed an unusually elaborate and careful series of experiments with a view to the determination of the actual anti-septic value of the drug. He made use of a solution containing iodine 2.5 gm., sodium iodid 5.5 gm., sterile water 250 c.c., making 1-100 solution. A 1-100 solution of mercuric chlorid acting on a culture of streptococcus pyogenes for 15 minutes showed a good deal of inhibitory power for the first day but allowed a good growth of streptococci to appear. An exposure of 30 minutes, however, gave no growth. The superiority of iodine is readily evidenced by the fact that a comparatively weak solution (0.2 per cent.) killed the streptococcus after two minutes exposure. To iodine the staphylococcus is far more resistant than is the streptococcus. While it takes a 1-100 solution five minutes to kill the former, a 1-500 solution is fatal to the latter in two minutes. Dr. Kinnaman's conclusions are that in a solution of iodine varying from 0.2 to 1-6 per cent. we have a germicidal agent of marked potency. Its bactericidal is far superior to mercuric chlorid, the acknowledged leader of all antiseptics.

The author reports a case of multiple tuberculous abscesses of the muscles of the chest and back treated by repeated injection of iodoform in olive oil in which the results were most gratifying. He calls attention to the fact that the injection of the emulsion into the joint is naturally followed by a rise of temperature which may last for several days.

The iodoform gauze treatment of puerperal sepsis introduced by the late Dr. Pryor, of New York is commented on most favorably. The method is considered to be unassailable from a deductive as well as a resultant point of view. Pryor packed the uterus and the retro-uterine space with iodoform gauze after thorough curetting and irrigation. The iodoform gauze filling of von Mosetig-Moorhoof has been found to be a most valuable adjunct in the treatment of the circumscribed chronic osteomyelitis.

Aumond and Bonnaire use the following formula for an irrigating solution; iodine 3 gm., potassium iodid 6 gm., water 1,000 gm. They make use of the pure tincture as a local application prior to curettement as a means of partially sterilizing the inside of the uterus. Many of the old-time gynecologists were in the habit of making an application of the plain tincture to the inside of the uterus after curettement.

Iodine in weak solution as an irrigation is of much value in the treatment of suppurative conditions as suppurative arthritis, abscess empyema, etc. The author has several times used a one per cent. solution in the treatment of suppurating sinuses and wounds with the



result that there was a prompt disappearance of pus and an abundant formation of healthy granulation tissue.

It must not be forgotten that, although iodine is the most harmless of antiseptics, it and its compound iodoform are active agents and as such should be used with caution. They are under circumstances powerfully toxic. It is after injection into serous cavities that the most serious results are seen. The pyogenic membrane lining the tuberculous or pus cavity seems to possess the power of immunity to a marked degree. The old and enfeebled patient will be much more susceptible to the poisonous action than the more robust. It is a well known fact that an individual suffering from septic infection will tolerate much more iodine without the symptoms of poisoning than one under normal conditions. Rarely there are found persons having so marked an idiosyncrasy for iodoform that it will act as a poison when exhibited in the usual manner in small amounts.

The writer uses a one-half of one per cent. alcoholic solution for purposes of hand disinfection preliminary to operative work in all cases in which rubber gloves are not worn. The same solution is made use of in the preparation of the site of the operative incision. Rubber gloves are worn as a routine measure in operative work, but in certain number of these cases gloves are undesirable; again, in an occasional septic case, a glove may be punctured or torn, and the operator feels the need of some reliable antiseptic for his own sake as well as for the protection of his future patients. The use of this solution simplified the technic and saves time. The method practiced is as follows: First thorough scrubbing with nail brush, green soap and running hot water, going over the hands in a systematic and methodical manner, taking each part in its turn and always following the same order as to skip no part. Particular attention is paid to the nail folds subungual spaces, and the skin between the fingers. Short clipped nails should be cleaned with an orangewood stick, the hands scrubbed again, washing off the soap in running hot water. Remove the residue of the soap with 70 per cent. solution of alcohol, immerse in iodine solution for five minutes, rinse in sterile water. The light-brown stain can be removed by washing in dilute ammonia water after operations, or if left alone will soon disappear.

The results clinically of this method have been superb. In a long series of cases no infection attributable to the hands has occurred.

In conclusion the author states his belief that the iodine constitutes a near approach to a perfect antiseptic in that it is nontoxic in effective strength, being one-fourth as poisonous as mercuric chlorid though many times more valuable as a germicide. It does not coagu-

late' albumin or form inert compounds with the tissues. It possesses great penetrating power, is easily prepared and is stable.

A solution of iodine is the most practicable chemical agent we have for the sterilization of the skin.

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## MEDICAL DIGEST.

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### BASEDOW'S DISEASE.

Recently we observed three different physicians trying to make a diagnosis in the case of a man who was suffering from gastric symptoms and tachycardia. It finally proved to be Graves Disease, or Basedow's disease. Some cases are atypical as in the cases reported below. (*Abstract N. Y. State Jour. Med.*)

Three unusual cases of Basedow's disease containing much of interest are reported from Senator's clinic in Berlin by Mosse. The first was a patient with a morbus Basedowii, formerly quite severe but improved, in whom Graefe's symptom was present on the right side and ptosis on the left. The ptosis was a paralysis of the levator palpebrae. Several explanations of the Graefe symptom bring the two symptoms present in this case into harmony. Lang and Pringle assert that a contraction of the levator palpebrae is the direct cause of Graefe's symptom; hence in this case there was on the right side an irritable and on the left a relaxed condition of the muscle. Ferri explains the symptom as caused by an increase of the orbital contents, whereby a relative shortening of the muscle results. As exophthalmos was in this case more pronounced on the right side, this theory could be made to harmonize both conditions. In a similar case reported by Wilbrand and Saenger, however, these authors conclude that there is a central nerve origin causing the irritable muscular condition on one side and the relaxed condition on the other. In proof of this conclusion they report an autopsy of a case of congenital double-sided ptosis where aplasia was found in special tracts of the oculomotor nucleus. Such a case as this is at least a reminder of the occasional occurrence which Uthoff mentions, of nuclear oculomotor paralyses in exophthalmic goitre, as the result perhaps of primary pathologic changes in the medulla, or because this locality may be a place of least resistance against the toxic effects of the products of the thyroid.

In the second case reported by Mosse the thyroid was not at all enlarged, but the exophthalmos, tremor and heart symptoms were all strongly marked. This is quoted as an example of the fact recently

noted by Senator that the goitre and the severity of the other symptoms stand in no exact relationship to each other. No goitre need exist for a well marked morbus Basedowii to be present.

Nannyn writes that spontaneous glycosuria accompanying exophthalmic goitre has been described by several authors as of occasional occurrence, but that he has never observed such a case in the Strassburg clinic. Mosse reports the third case of this kind which he has observed.—*Berliner Klinische Wochenschrift*, 1907, No. 1.

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### ADENOIDS THE CAUSE OF ENTEROCOLITIS.

Adenoids have been given a high place in the etiology of disease in children. Teething as a cause has been displaced by adenoids. Enuresis, convulsions, night terrors, malnutrition, and a host of other diseases have been attributed to adenoids. Worms must take a secondary place now. Here is the latest. (Abstract, *N. Y. State Jour. Med.*)

That enterocolitis in infants is almost without exception coincident with and dependent upon adenoid growths is the belief of Rôux and Jusserand. In 37 cases investigated they found both conditions, not as a simple coincidence, they say, but where the enterocolitis was caused by swallowing pus and mucus from the adenoids. These cases were mostly in the first two years of life, the oldest was 11 years old. Constipation alternating with diarrhea, and uninfluenced by diet, was present. The only cure for this condition is removal of the adenoids, followed then by proper therapeutic measures.—*Revue mensuelle des maladies de l'enfance*, August, 1906.

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### THE CLINICAL DETECTION OF ALBUMINURIA.

"Albuminuria" as used clinically is not a very exact term, but refers to the presence in the voided urine of any albumin body which responds to the tests for albuminous material. Further, the sources of such substances may be any portion of the genito-urinary tract. As there is this possibility of variation both in the nature and source of the albuminous material, obviously the presence of it in the urine will be of a varying significance. Catheterization will exclude almost entirely the genital tract as a source, but it is hardly feasible to thus obtain all routine specimens, and even were it done, the bladder, ureter and hilum of the kidney remain as possible extra renal sources for the albuminous material. Fortunately, a determination of the nature of the albuminous material and its association with formed elements in

almost all cases gives evidence as to the source and significance of the albuminuria.

Numerous albumin bodies may occur in the urine, but all except four, nucleo-albumin, serum-albumin, serum-globulin and Bence-Jones's albumin, may be neglected in the usual clinical examination. Nucleo-albumin, whether its source be renal, cystic, prostatic, testicular or urethral, occurs alone very frequently in the urine, appears to be non-nephritic in origin and so is to be excluded before using the presence of albuminuria as evidence of nephritis. Bence-Jones's albumin (albumosuria) apparently does not indicate a renal lesion but is of diagnostic importance in multiple bone tumors. Serum-albumin and serum-globulin usually occur together and their presence almost always indicates a damaged kidney. It is of particular importance to distinguish nucleo-albumin from serum-albumin or serum-globulin when the reaction is very slight. The failure to do this is largely responsible for the clinical uncertainty as to the significance of the report of the presence of the "slightest possible trace of albumin" in a specimen of urine.

For practical purposes what is needed is a group of tests easily carried out and requiring but few and stable testing fluids, which will enable us to determine the nature of the albuminous material. The two tests most generally used, the Heller nitric acid test and the heat acetic acid test, possess the advantages of simplicity, but have two defects in that they do not distinguish nucleo-albumin, which is of very little significance, from serum-albumin, which is of much import, and they fail to detect either when present in small quantity under conditions in which there is a urine of very low salt content. Hastings has suggested simple tests which appear to possess the desired characteristics, and deserve a very general trial.

He suggests the following procedures: A test tube two-thirds full of urine is heated in the upper third; a cloudiness may be due to nucleo-albumin, serum-albumin, serum-globulin, Bence-Jones's albumin, phosphates or carbonates. The addition of 2 to 5 drops of 50% acetic acid and second heating clears the solution unless the first three are present.

If the reaction is faint ("faint trace"), probably serum-albumin or nucleo-albumin or both are present. The presence of nucleo-albumin is tested for by diluting 3 to 5 c.c. of urine with five to six times its volume of distilled water, adding to one-half of this diluted urine 1 to 2 c.c. of 50% acetic acid cold, not heating; a diffuse cloudiness in the acidulated one-half is nucleo-albumin. (It may be mucin, but mucin will not respond to the first heat and acetic acid test.)

Nucleo-albumin is not precipitated by heat and acid in highly "salted" urines. To prove serum-albumin, therefore, to the urine add one-fifth volume of saturated sodium chloride solution, heat upper third, add 2 to 5 drops of 50% acetic acid, heat a second time; a persistent cloud equals serum-albumin. (May be present with serum-globulin.)

If there be a massive reaction, usually serum-albumin with serum-globulin is present, or there may be albumose (Bence-Jones), or serum-albumin alone or with fibrinogen.

To separate serum-globulin and albumose (Bence-Jones): To the urine add one-fifth volume of saturated sodium chloride solution and 2 to 5 drops of 50% acetic acid, without heating; a cloudiness may be due to serum-globulin or albumose (Bence-Jones) (rarely serum-albumin alone). Heat upper third; a heavy cloud followed by partial clearing suggests albumose (Bence-Jones); persisting cloud serum-globulin, or serum-albumin or both. Boil entire tube; filter; heavy cloud reappearing in filtrate on cooling is due to albumose (Bence-Jones). A faint reaction on cooling, due to deutero-albumose, often appears and this has practically no clinical value.

For serum-globulin: To a test tube of distilled water add urine, drop by drop to 8 or 10 drops; no heating; a cloud (cold) indicates serum-globulin. This cloud clears after addition of 2 to 5 drops of acetic acid (cold).

The most reliable test for serum-albumin in urine is that of "salting" the urine with a saturated solution of "salt" (sodium chloride) as described above, acidulating with 50% acetic acid and heating to boiling; this throws down all traces of serum-albumin and prevents a nucleo-albumin reaction.

It is important in all cases where there is a faint reaction to use fresh specimens, since in the presence of bacteria a positive reaction may be obtained as shown by Hastings, probably due to autolytic processes in dead bacteria.

Hastings and Hoobler have used these tests in 3,089 urine examinations. Of these, 26.5% showed nucleo-albumin alone, and in none of these was there any clinical evidence of nephritis. In 14% the reaction for serum-albumin appeared only after salting. As a result of these examinations, Hastings and Hoobler regard albuminuria with casts as good evidence of nephritis, either temporary or permanent, but non-renal albuminuria is frequent, a fact more generally recognized by the genito-urinary surgeon than by the general practitioner.—*Boston Med. and Surg. Jour.*



## EXPERIMENTAL NEPHRITIS.

Much interest is at present given to the artificial production in animals to arterio-sclerosis, also nephritis. A good summary of recent work in experimental nephritis is found in the *Boston Medical and Surgical Journal* (March 21). A number of investigators have been successful in producing an experimental nephritis.

Ophuls has produced changes in the kidneys of guinea pigs and dogs similar to that found in chronic interstitial nephritis by feeding lead carbonate, lead acetate or potassium bichromate for a prolonged period. As a result of this study, Ophuls believes that the changes in the epithelium and the connective tissue are coordinate not subordinate, to one another. This view is opposed to that of Weigert, who believed that the epithelium is primarily injured and the connective tissue growth is secondary. To quote:

Ophuls in the course of his experiments found no albuminuria or cylindruria, which suggests that in man the lesions of chronic interstitial nephritis may be developing for a long time before these clinical signs become evident.

Richter has shown that subcutaneous injections of small doses of uranium nitrate will produce in animals a condition analogous to nephritis in man with albuminuria, cylindruria and hydrops. The production of hydrops is absent in the experimental nephritis produced by almost all other substances so far used, though the renal lesions may be quite similar. This is true for cantharidis nephritis. Georgopulos gives the following description of the renal lesions produced in rabbits by doses of uranium nitrate, fatal in four or five days. In some cases degenerative processes in the tubular epithelium are most prominent, and vary between simple cloudy swelling and complete necrosis. Many casts and desquamated epithelial cells are present. In other cases especially the glomeruli are affected and some of these deserve the designation of a glomerulo-nephritis. There is also an intertubular and periglomerular infiltration of the connective tissue.

Wallerstein has studied the origin of hyaline casts in experimental nephritis. Rabbits were given subcutaneous injections of neutral ammonium chromate, canthardin or mercury bichloride. In others the ureters were ligated. In these ways albuminuria and cylindruria were produced. Cylindruria without albuminuria was produced in dogs as the result of icterus following ligation of the common bile duct, and in rabbits as the result of artificial coprostasis following closing the anus. The animals were killed after varying periods up to four days, and tissue from the kidneys studied histologically. In the urine of these animals epithelial casts preceded hyaline casts. In the kid-

ney, casts in process of formation could be observed, and Wallerstein concludes from his studies that both granular and hyaline casts have a common origin from epithelial cells and that hyaline casts represent an end stage.

A number of Senator's pupils have studied various phases of the pathological physiology of nephritis by the experimental method, employing chiefly uranium nitrate in the production of the nephritis. Bibergeil showed the regular presence of glucose in the ascitic and pleural fluids from such animals. This glucose could not be increased by giving phloridzin or sugar. Georgopulos studied the question of the relation of chloride retention to edema, but found there was no constant relation. Hydremic plethora alone did not seem a sufficient cause for the edema, but some toxic substance acting injuriously on the blood vessels must be present in order that a transudation be produced. Blanck obtained further evidence of the presence of such toxic substance by producing an experimental nephritis without hydrops and then inducing hydrops by the injection of blood serum from an animal in which there was an experimental nephritis with hydrops.

With these various methods of successfully reproducing in animals the conditions found accompanying nephritis in man, it is probable that a very much better understanding of the pathology and physiology of nephritis may be obtained than we have so far gained from postmortem and clinical studies.

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### PHYSICAL TREATMENT IN MYOCARDITIS.

The recognized limits of drug therapeutics in diseases of the myocardium has led to an analysis of conditions which has yielded well in the matter of improved treatment. At best there are serious disadvantages in most cases because of degenerative changes, but, whatever the heart condition, we must secure as good circulation as possible to the working tissues of the body, meaning by this the cells of the various organs and especially those concerned in nutrition and elimination; for if we do not succeed in this direction, we cannot expect improvement of any permanency in the heart. This anticipates the observation that a good circulation depends upon two factors—good blood and good heart action. These factors are mutually dependent. Faulty heart action means lessened oxidation and poor elimination with the resulting accumulation in the blood of toxic products of a disturbed catabolism. On the other hand, a blood of poor quality cannot properly nourish the heart so as to maintain good action.

Though it is easy to forget that the heart, as well as any other organ, needs good blood, we find that that treatment of the heart is most successful which secures the best welfare of the body as a whole, because whatever contributes to better general nutrition aids nutrition of the heart. We have paid too little attention to nutrition of the myocardium while asking for some means of getting more work out of it. We ought to reverse the matter and supply the heart with better blood and give it needed rest instead of stimulating it.

Our treatment, therefore, resolves itself into taking better care of the heart as an individual organ. Drug treatment will not cover the case. The structurally-diseased heart will not admit of the use of depressing drugs and, as a rule, the same changes render it inadvisable to force it to greater activity. Again, the organ is working to the limit of its strength. Its work needs to be reduced until a balance between its reserve energy and its activity can be secured, with dilatation reduced. A better heart action must come through rest and improved nutrition, while a better blood for the heart's nourishment must come through more perfect oxidation and efficient elimination. These are the principles that should guide in our treatment. What are the methods?

The question of absolute rest in bed will depend upon the disability of the heart, as measured by the degree of dilatation and general circulatory failure present. In cases with oedema or dyspnoea, rest in bed for a time is usually required, but it is of equal importance to lessen the work of the heart by lowering the resistance in the periphery of the body, against which it has to force the blood current. This involves vasomotor relaxation, which is accomplished rather better by means which at the same time improve oxidation than by such drugs as nitroglycerine, whose primary action is depressant. The more positive methods of improving nutrition of the heart muscle are few, but they prove effective in very many cases. They consist of physical treatment of the body periphery. No other single method has served as well, both in producing definite results and in educating us in cardiac therapeutics, as the Nauheim treatment, with the baths, judicious rest and properly graded exercises. Fortunately we can employ the method in principal anywhere, by use of the brine bath, the effervescent salty (Schott) bath, massage, and graduated exercises, all of which aid our purpose to improve oxidation throughout the body and to increase elimination, besides making the flow of blood through the arterioles and capillaries freer, thereby lessening the resistance against which the heart has to work. The work may at times be reduced by a single Schott bath to the extent of allowing the

apex of a dilated heart to recede half an inch or more, indicating a lessening of the dilatation; and continuance of the treatment will often restore the myocardium to a state of good nutrition and usefulness.

The results of physical treatment have given it a place above that of drug treatment, although the therapist will employ both as the individual case may demand, and always with wise discrimination. —E. H. L., *N. Y. State Jour. Medicine*.

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## THE HEART IN CHRONIC PULMONARY TUBERCULOSIS.

Ernest Barie (*Jour. des Prat.*, January 12th, 1907) in considering the variations which the heart undergoes in chronic pulmonary tuberculosis, divides these into two main varieties according to the condition of the lungs, whether of the cavitation form or of the chronic fibrotic form. When the cavitation form of chronic pulmonary tuberculosis is present the heart shows very few abnormal variations; in a large number of cases the size of the organ is about normal, in others its volume and weight are diminished although its shape is natural. In some cases one finds a true atrophy of the heart, in others its walls are remarkably soft and flabby, or its surface is covered with a thick layer of adipose tissue, chiefly at the level of the right ventricle, about the auriculo-ventricular groove, at the apex, and where the large vessels arise from the base of the heart. In rare cases fatty degeneration, and, still rarer, hypertrophic sclerosis of the cardiac muscle have been found. When the lung disease is of the chronic fibroid variety, an increase in the size of the heart is frequently found, if not the rule. The author agrees with the explanation, now generally accepted, that dilatation of the right side of the heart in phthisis is mainly the result of the pulmonary sclerosis, the emphysema, and, in a less degree, to the pleural adhesions and the dilatation of the bronchi. To explain those cases of the cavitation form of phthisis in which the right side of the heart is hypertrophied and dilated, the author advances the following explanations: (1) The lung disease is associated with cardiac disease (valvular disease, pericarditis, adherent pericardium): this association of phthisis and heart disease is far from being rare; the association of phthisis and mitral disease is commoner than phthisis and aortic disease (Gunsberg). (2) In addition to the lung disease there is pulmonary stenosis. (3) The lung disease is complicated with digestive troubles. The author explains the cardiac hypertrophy resulting from irritation of the digestive tract by assuming that irritation of the digestive tract causes reflexly a spasmodic contraction of the vessels in the pulmonary circulation, which secondarily gives rise

to hypertrophy and dilatation of the walls of the right side of the heart: in some cases this dilatation may be so marked as to allow of tricuspid regurgitation, which, however, in most cases disappears under suitable treatment for cardiac dilatation.—*Brit. Med. Journ.*

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### THE BLISTER TEST IN TUBERCLE.

Mirano (*Rif. Med.*, February 2nd, 1907), as the result of certain experiments on this subject, concludes that the test is of little value clinically whether for diagnosis or prognosis. The experiments were carried out on 15 persons (7 tuberculous, 7 suffering from different affections, and 1 healthy). A blister 4 cm. square was put below the clavicle and left on for about twelve hours, and the contained fluid then collected and examined. The lowering of the eosinophile index which was said to be a sign of early tubercle was, the author found, by no means confined to tuberculous subjects. Again, the dropsical state of some of the cellular elements which is also said to be diagnostic of tubercle, depends merely on the irritant action of the blister on the leucocytes and is a purely local action having no relation to the bone medulla. Possibly this local action—as in the case of the bullae of herpes—may be due not so much to the cantharides as to some principles derived from the degenerative transformation of the epidermoidal cells. The author found that the number of eosinophiles varied according to the time at which the fluid was examined. The greater the time between the appearance of the exudate and its examination the greater the percentage of neutrophiles—the less the time, the greater the number of eosinophiles. On the whole the author believes much more reliable results can be obtained by direct examination of the blood than by examination of the fluid raised by blister.—*Brit. Med. Journ.*

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### THE USE OF AMMONIA IN COUNTERACTING THE FUMES OF FORMALDEHYDE.

Wilcox (*N. Y. Med. Journ.*, March 23) writes very instructively on the subject of fumigations by formaldehyde. This method of disinfection has been used about 20 years and during the past five years it has been rapidly displacing other methods. The chief objection is that the fumes are so exceedingly irritating and persist so long after fumigation. It is often impossible to sleep in such room for forty-eight hours or more. Recent experiments indicate that the full efficiency from formaldehyde is secured if the fumigation is continued



for twenty-four hours. Not long ago the author undertook some experiments with ammonia to make the room habitable. To use his own words:

Some laboratory experiments on a small scale were made at once to determine whether formaldehyde fumes could be entirely neutralized by ammonia fumes in the air under ordinary conditions. It was first found that commercial formaldehyde mixed with aqua ammoniac undergoes a rather rapid reaction causing the development of heat and the formation of a crystalline body which appears upon evaporation. This body is hexamethylenamine  $(CH_2)_6 N_4$ , a substance which under other names is used to some extent as a solvent of uric acid in the treatment of certain diseases. Hexamethylenamine is practically odorless. At least the odor is not disagreeable even when the body is present in the room in considerable quantities. A simple laboratory device readily showed that the fumes of formaldehyde could be completely neutralized with ammonia fumes or *vice versa*. The reaction takes place almost instantly.

Encouraged by these preliminary experiments the method was tested on a larger scale at home after fumigation of the sick room and the rest of the house. In fumigating the sick room containing 1,500 cubic feet of space, two quarts of methyl alcohol were consumed in a formaldehyde generator and in addition three pounds of commercial formaldehyde were exposed on the sheets. As soon as the room had been ventilated sufficiently to make it possible to work in it, one and one-half quarts of ammonia were sprinkled over the rugs and bedding, and the room was closed again. About the same proportion of ammonia was used throughout the other rooms of the house where the quantity of formaldehyde generated had been relatively somewhat less. The formaldehyde fumes were completely destroyed within one-half hour, and the odor could not be detected in any part of the house except where formaldehyde had been spilled on the floor and had left an incrustation of paraform upon the woodwork. As soon as these spots had been treated with ammonia the odor of formaldehyde disappeared entirely.

The method of applying the ammonia in this case was a crude one, but has the advantage of being simple and could be readily carried out by any person. The method does not interfere in any way with the effectiveness of fumigation. In fact, according to von Rigler, ammonia fumes have considerable germicidal value in destroying infection after the prevalence of diphtheria or scarlet fever. Ammonia does not injure any fabrics upon which it may be sprinkled, and if used in larger quantities than necessary to neutralize the formalde-

hyde fumes, the odor of ammonia may be removed in a few moments by ventilating the room.

Conversations with health officers since this experiment have disclosed the fact that the effectiveness of ammonia in neutralizing the formaldehyde fumes is known to some of these officers, but the use of ammonia is very restricted and almost never recommended. It seems as if the unfortunate householder who has suffered from an outbreak of an infectious disease should be given the benefit of such information in every instance if he has not already heard of the immediate relief obtained from the simple application of ammonia.

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### MIGRAINE.

That interesting disease known as migraine offers numerous interesting phenomena, such as vasomotor changes, polyuria, alteration in the pulse rate, etc. The relation of migraine and hemianopsia is discussed in the *Journal of Nervous and Mental Diseases* an abstract of which appears in the *New York Medical Journal* from which we quote:

"Thomas reviews the cases referring to the title of his article, to be found in the literature and adds the history of three of his own. He observes that a consideration of these cases of permanent hemianopsia, and cerebral paralyses, and aphasias reported by various writers shows conclusively that such accidents occurring during an attack of migraine are not exceedingly rare, and at least indicate that migraine may be the exciting cause of a cerebral thrombosis, or possibly a hemorrhage, but in most cases there is at least strong ground for believing that the cerebral lesion was due to arterial disease, the migraine being at the most only an exciting cause and in some cases the headache was probably symptomatic only, while in other cases the presence of migraine at all, even as an independent disease, seems very doubtful. The general opinion of writers upon migraine is that the cause of the attacks is a vasomotor disturbance, probably dependent upon some toxic cause of unknown origin, though the former division into cases of vasoconstriction, and dilatation must undoubtedly be given up, if for no other reason than that the condition of the superficial vessels, from which the argument was drawn, often varies in the same person at various stages during a single attack. Spitzer, in 1901, advanced an ingenious theory to account for migraine. He ascribes it to changes apparently supposed to be inflammatory in character about the foramen of Monroe, which produce a relative or absolute stenosis, then he also assumes a hyperamia causing an increase of fluid

in the ventricles, and so a pressure which is greater upon the veins; and hence there is added a passive hyperæmia, and he thinks often an actual tearing of the tissues and hæmorrhages. When the subdural spaces are filled the headache begins, then the ventricles dilate, the foramen opens, and the fluid passes off. Various objections have been urged to the theory, such as the fact that all symptoms disappear in the intervals between the attacks, which we should hardly expect in the case of organic changes such as have been supposed. Neither does such a theory explain the frequent unilateral character of the headache, or its shifting from one side of the head to the other during an attack, nor its heredity. Mobius thought that in migraine there are changes in the cells in the brain. Oppenheim considers a vasomotor constriction of the vessels the most probable explanation. Stekel and Meige and most other recent writers agree with this opinion. In considering his cases the author thinks that attacks of migraine may result in an area of softening in the brain, which shows itself by a permanent paralysis, aphasia, or hemianopsia, and that in most instances this is due to the attack favoring a vascular lesion in persons who have already disease of the walls of the bloodvessels, but that in certain cases the vascular lesion may occur in young persons whose bloodvessels are in all probability in a normal condition."

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### FAINTING.

An interesting paper on fainting by Sir W. R. Gowers, (*Lancet*, March 2) is abstracted in *New York Medical Journal* and is important in that it gives our lack of knowledge of this common disorder.

"Gowers states that our knowledge of faints and fainting is just enough to obscure our ignorance. The most obtrusive feature of complete cardiac syncope is the loss of consciousness which results, evidently due to the failure of the action of the heart which precedes and attends it. But as consciousness is not the result of the circulation of the blood, so unconsciousness is not the direct consequence of stoppage of circulation. Its immediate cause must be a state of the nerve elements of the brain due to the change in the circulation. Mere failure of the supply of nutrition furnished the brain by the heart is not an adequate explanation. The renewal of nutrition of the nerve elements, the supply on which their metabolic processes depend, is from the plasma about them, derived from the blood indeed, but for the time extravascular. At any given moment the amount of this must be adequate to maintain the metabolic changes and the function that depends on these for a much longer time than that during which con-

sciousness is maintained in syncope. Sudden death in aortic regurgitation is clearly syncopal, but it is so immediately synchronous with cardiac failure as to negative any view that it is due to failure of nutrition. Sudden diminution in blood pressure within the cavity of the skull must, however, exert considerable influence. It will be effective in proportion to its suddenness, as are all variations of intracranial pressure. How the alterations in the nerve elements are produced, and the nature of those alterations, is not known. It may be conceived of as a widespread retraction of cortical dendrites, interrupting their connection with all lower centres. It is doubtful whether true cardiac syncope ever causes absolutely sudden loss of consciousness except when this is due to a fatal arrest of the action of the heart. It seldom causes a hurtful fall, the deliberate onset enabling the patient to lie down, when gravitation ceases to hinder the flow of blood to the brain and the blood pressure is restored. When consciousness returns there is correct perception of surroundings from the first, never the mental confusion and erroneous action common after minor epilepsy. Syncope is often due to a cause which can act only through the nervous system, such as sudden intense pain, the sight of blood, certain odors, etc. Here syncope is probably the result of a profound influence on the sensory regions of the cortex, focused down on the cardiac centre in the medulla. Sudden change of posture is an occasional excitant of loss of consciousness, and if the change is to the erect posture it may be regarded as syncopal. Stooping or lowering the head has the opposite effect on the intracranial circulation, tending to increase the amount of blood in the vessels. Severe paroxysms of coughing may have the same effect."

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#### TREATMENT OF THE VOMITING OF PREGNANCY.

The memorandum by Dr. Rowland, of Lichfield, in the *British Medical Journal* of November 24th, 1906, recommending veronal in the vomiting of pregnancy, has suggested to me to bring to the notice of the profession another method of treating this condition.

We must assume that headache, nausea, vomiting, diarrhoea, albuminuria, occurring during the course of pregnancy, are due in most cases to the presence in the system, at that time, of the products of faulty metabolism. In a normal pregnancy these are not formed in any quantity, or, if formed, are eliminated sufficiently rapidly and thoroughly to help the patient to escape the severer symptoms and the marasmus consequent on them. The elimination takes place through the usual excretories—stomach, bowels, kidneys. In the early stages



of pregnancy the principal organ to throw off the metabolic poison is the stomach—hence the vomiting. It should be our endeavor (1) to remove the metabolic poison already formed; and (2) to prevent the formation of more of this toxin.

1. The first object can be attained (*a*) by washing out the stomach, and hence mechanically removing the matter which is irritating that organ. This can be done by copious draughts of warm water given the first thing in the morning, when it seems that the long hours of fast have allowed the accumulation of the poison. If necessary, the draught of water is helped to return by touching the back of the tongue with the finger. In many cases the patient is able, after this lavage and a little rest, to get up and take food, and is not troubled again for many hours, perhaps not until the next day. (*b*) By breaking up the chemical structure of the poison and then washing out the stomach. This is successfully done by the administration of 2 to 4 gr. of potassium permanganate swallowed in a cachet with 3 to 4 oz. of water. The patient keeps this in the stomach from ten to twenty minutes, lying very still, not speaking or moving. Then she is directed to take a pint or more of warm water, which is helped up if necessary. In some cases, when the larger doses of potassium permanganate are not retained long enough to ensure the chemical decomposition of the contents of the stomach, it is beneficial to give 1-gr. doses every four hours, and the patient to retain the cachet altogether, or as long as possible. After experience of this method of treatment I have never found any eebolic action of the permanganate.

2. To reduce the formation of the metabolic toxin it will be necessary to administer thyroid, on the same principle on which this drug is used in the treatment of the convulsions of pregnancy—that is, to regulate metabolism. Generally one 5 gr. tabloid of Burroughs and Wellcome administered three or four times a day will prove sufficient. The effect of this drug on the pulse must, of course, be watched. It must be stopped or diminished when the pulse gets too rapid and too soft, or when the vomiting disappears, to be recommended when the symptoms reappear.—*Dumat in Brit. Med. Jour.*

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### THE TREATMENT OF SCABIES BY BALSAM OF PERU.

The treatment of scabies in military hospitals is disappointing. The average detention in hospital for the disease, and for the treatment of the dermatitis which usually results from the vigorous application of the preparations of sulphur, is seldom under fourteen days. There is a good deal of difficulty in deciding as to the perfect cure of



the patient and as to his fitness to be discharged from hospital. The number of days which these healthy men abide in hospital, and the labor and dirt involved in their treatment are also worth considering. In the military hospital at Berlin and in the Bavarian army cases of scabies are merely detained for the day in the sick-inspection room at their barracks, and are thoroughly rubbed with pure balsam of Peru, which is applied after a hot bath and a plentiful application of soap. It has never been heard that the disease has spread in consequence of the non-isolation of these cases. This treatment used to be carried out in the Italian army, but has been discontinued on account of the expense.

From December, 1905, to December, 1906, every case of scabies in the Colchester garrison has been treated by this remedy. They numbered 51. The patient should lie in a very hot bath for at least half an hour, and be thoroughly scrubbed with flannel and ordinary soap by a reliable orderly. Particular attention should be paid to parts which are obviously much affected by the disease. He is then quickly dried and varnished all over with a mixture of balsam of Peru 3 oz. and glycerine 1 oz. This application—best applied by a soft, worn nail brush—is well rubbed into the skin. The above quantity will be found sufficient to varnish an ordinary sized man. He then puts on hospital clothing, the cotton shirt being worn next the skin. His ordinary clothing and his barrack bedding are sent to be disinfected. In very bad cases it is advisable to give a second rubbing to the worst places next morning. A supply of cotton drawers and undershirts would be very useful for these cases and would have soiling of the hospital clothing.

No patient who has been properly varnished has ever reported that his next night's sleep has been disturbed by itching; and if the remedy has been faithfully applied according to the above instruction, that is the end of the case. If it were possible to disinfect the patient's uniform and bedding while he is being rubbed, there would be no necessity to admit him to hospital at all. All these cases come up for observation once a week, for three weeks. The average detention in hospital has been about three days.

At the present time, it is a little uncertain whether the ova are killed at the same time the parent undoubtedly is, namely, within the first few hours. For this reason it is thought advisable to prohibit bathing for seven days. Further observation may show that it is possible to reduce this period to three or four days.

For use on transports, and in large out-patient departments of civil hospitals, this treatment should be most valuable. Balsam of

Peru can be purchased at 4s. 6d. per lb. One shilling would therefore cover the cost of the whole treatment of one patient apart from baths and disinfection of clothing.

In military practice, the great features of this method as compared with preparations of sulphur are (1) the possibility of returning men to their duty after a few hours' detention in hospital; (2) the absolute certainty that the acarus has been killed; (3) the ability to dispense with a ward which has to be kept for the treatment of these cases. This treatment was introduced at Colchester by Lieutenant-Colonel S. C. B. Robinson, R. A. M. C.—F. J. W. Porter in *Brit. Med. Jour.*

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### UTERINE FIBROIDS.

Giles presents a very interesting report of 150 cases of uterine fibroids, and adduces instructive conclusions. The youngest patient was 23 and the oldest was 63 years. In Giles' opinion the age of the patients does not materially influence the character of the tumors, except in the manner of degenerative changes, which are strikingly absent before the age of 40 years. In 60% of his cases of fibroids the patient had not been pregnant, while in 84% of the cases the patient had either not been pregnant at all or had no pregnancy for at least ten years. Giles desires to emphasize his belief that it is not sterility but the non-occurrence of pregnancy that is followed by the formation of fibroids. The uterus that could not become pregnant, through under-development or through deficient ovarian activity, is commonly exempt. The uterus that could have become pregnant, but has not done so, is the one that pays the penalty.

Hemorrhage was a prominent symptom in 57% of the cases. In a few instances the patients were almost ex-sanguinated. The worst cases were those in which the tumors were intra-uterine or submucous.

Pain is not a characteristic symptom of uncomplicated cases. When present it denotes either mechanical pressure on surrounding organs or some complication such as diseased appendages or localized peritonitis leading to adhesions.

Abdominal swelling, sufficient to cause serious discomfort, was present in just one-third of the cases, while pressure symptoms were noted in 41 of the 150 tabulated cases. Giles mentions the fact that the bowel commonly escapes the effects of pressure, unless the uterus is retroverted or an outlying tumor grows downward into Douglas' culdesac, or spreads out on the left broad ligament. Pressure on the bladder and urethra varied from simple irritation to complete retention.

Uterine fibroids are liable not only to the accidents of impaction in the pelvis and torsion of the pedicle, but to secondary changes. These latter may be myxomatous, necrobiotic, calcifying, etc., in character. The fibroid uterus may become retroverted or pregnant. In four of Giles' cases the latter condition presented.

Fifty-nine of Giles' 150 cases showed diseased tubes and ovaries. In 33 instances the ovaries showed cystic changes.

Giles voices the consensus of opinion when he prefers the abdominal route as a rule. He has found that the supravaginal hysterectomy is usually preferable. Total hysterectomy is performed whenever the cervix is the seat of tumors or there is a suspicion of malignancy. In this connection it may not be amiss to mention the fact that more than seventeen instances have been reported in which the supravaginal technic was followed by malignancy of the stump, thereby necessitating secondary excision. (Babler).

Giles says: "Today the risk of operations for fibroids arise chiefly out of serious complications, and if we act upon the principle of removing fibroids as soon as they give trouble, without waiting until the onset of dangerous complications, the operative mortality will fall as low as that of ovariectomy."—Giles, *Lancet*, March 2, 1907.

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### A FEW VALUABLE TESTS.

Fenton presents a new and delicate test for sugar in the urine. He claims that it is sufficiently delicate to detect 0.2 per cent. or less of sugar in any liquid. The lecture follows: Pour a small quantity (4 or 5 c.c.) of the fluid on to an excess of solid anhydrous calcium chlorid so as to form a semisolid, or pasty mass. Add to this 10 c.c. of toluene containing 2 or 3 drops of phosphorous tribromid and then carefully boil the mixture for a few minutes, bearing in mind the inflammable nature of toluene. Pour off the toluene solution and, after cooling, add to it about 1 c.c. of malonic ester and a little alcohol. On neutralizing the mixture by adding alcoholic potash, drop by drop, a characteristic pink color will usually be observed. The mixture is now considerably diluted with alcohol and a few drops of water when, if sugar was originally present, the solution will exhibit a beautiful blue fluorescence.

Barberio presents a superior test for the detection of human semen. The reaction occurs even though spermatozoa be absent from the semen—a point of importance in cases of blenorrrhages blateral epididymitis, when the ordinary microscopical method is useless.

Barberio adds a concentrated aqueous solution of picric acid to

one drop of the suspected semen or its concentrated aqueous solution. In the presence of semen rhomboidal crystals, yellow in color are formed. This is a delicate microscopical reaction.

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#### ACETONE IN THE URINE.

Jackson Taylor (*Lancet*, March 23, 1897,) presents an improved modification of the sodium nitroprusside reaction. He suggests the substitution of strong ammonia for the liquor potassae and the elimination of the use of the acetic acid. Strong ammonia solution is accordingly added to a solution of sodium nitroprusside and urine. If the ammonia is carefully added it remains clear on top of the fluid. Jackson Taylor says: "If acetone is present, even in minute quantity, a well-marked and absolutely characteristic ring of magenta appears within one to three minutes at the junction of the two fluids. The test is regarded as a very important and valuable one."

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#### BILE PIGMENT IN THE URINE.

Krokiewicz expresses renewed confidence in the efficacy of the test described by him some nine years ago. For its performance three solutions are necessary—viz., a 1% solution of sulphanilic acid in water, designated solution No. 1, a 1% solution of sodium nitrite distinguished as solution No. ii, and pure concentrated HCl. Solution 1 and 2 should be kept in bottles of colored glass. The test follows: Pour equal parts of solution No. 1 and No. 2 in test tube; shake thoroughly. One or two drops of the mixture are shaken with the same quantity of the fluid to be tested, diluted considerably if any quantity of the pigment is present. The mixture becomes ruby red in color after shaking for a few seconds. On adding a few drops of HCl, and diluting many times with water the color changes to amethyst violet. The coloration is very distinct and permanent. It is, moreover, with difficulty extracted from an acid solution: chloroform, ether, and carbon disulphide do not serve to effect this, while only traces are dissolved by amyl alcohol. The test has many valuable features. It is reliable.

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#### SCOPOLAMINE NOT HYOSCINE!

In the *Archiv fuer Gynaekologie* Steffen gives some interesting details as to the use of scopolamine-morphine by Leopold. The latter has employed this method in three hundred labor cases. His verdict is that the method does not accomplish the desired results, it can-

not be regarded as harmless for mother and child, and in private practice the by-effects liable to develop may render medical aid requisite at any moment. When men come to conclusions so opposite as those of Leopold and those reported by Gauss, we, to whom each observer is equally trustworthy and free from bias, can only attribute the diversity to a difference in technic. That this is so may be seen by Gauss' examination of Hocheisen's method. Gauss secured a specimen of the solutions employed by Hocheisen and tried them in ten cases, the results being far worse than those reported by Hocheisen. Every objection raised by Leopold has been examined and disproved by Gauss in his much larger experience. Weakness of the labor pains did not occur to any material extent, more frequently or more markedly than in cases where this anesthetic was not used, nor were version and forceps required with greater frequency. The vomiting could only have been accidental, since it did not occur in Gauss' cases, excepting when it had commenced before the anesthetic was given. So also as to the perils to the child; Gauss showed that the mortalities of both mother and child were much less than they had been before this anesthetic was employed.

The extract, as presented in *The Journal of the American Medical Association*, gives palpable evidence of anxiety to make out a case against this anesthetic method. Even Gauss is made to rank as an objector to the method, by quoting eight troublesome cases which occurred, out of his one thousand; just as if such things never happened unless scopolamine was employed. To any one who wants the whole truth, and not a garbled *ex parte* statement, we refer to Gauss' statistics as given by Holt, in the May number of *The American Journal of Clinical Medicine*. But even were the account given a fair one, the reader will note that it nevertheless relates to the use of scopolamine, which, as commercially presented, is *not the same thing as the hyoscine used in America*. It is much as if men should insist that, because Germans injure themselves drinking too much beer, we in America should abstain from coffee.

The above being the gist of our knowledge of this subject to date, and the therapeutic difference between hyoscine, a true alkaloid, and scopolamine (or so-called hyoscine from scopola—a serious error of nomenclature) a mixed, uncertain product, being well established in favor of hyoscine, we caution our readers who are interested (and all should be) to use only H-M-C Abbott (hyoscine, morphine and eactin comp.), the original American product and one which, like all the Abbott line, may be depended upon.



## YESTERDAY AND TO-DAY

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### THE DIAGNOSIS OF VESICAL CALCULUS.

BY E. A. BABLER, M. D.

The diagnosis of stone in the bladder was quite well understood in ancient times. Early writers presented an accurate description of the symptomatology of vesical calculus. Aretaens said:

"You may diagnose all cases of stone by the sediments of sand in the urine, and, moreover, they have the genital parts enlarged by handling them; for when they make water, and there is a stone behind, they are pained, and grasp and drag the genital parts, as if with the intention of tearing out the stone along with the bladder. The fundament sympathizes by becoming itchy, and the anus is protuded with the forcing and straining, from the sensation, as it were, of the passage of the stone. For the bladder and anus be close to one another, and when either suffers, the other suffers likewise.

"If the stone adhere to the bladder, it may be detected with care; and, moreover, such cases prove troublesome from the pain and weight, even when there is no dysuria, but yet the patient may have difficulty of making urine."

It is obvious that Aretaens was cognizant of the fact that a vesical calculus oftentimes became encysted; he appreciated the attending difficulties to the patient and the medical attendant.

Today the diagnosis of vesical calculus is not very difficult. The illuminating cystoscope has greatly simplified the diagnosis. In many instances the symptoms suffice to establish a diagnosis. At times the stone may be felt suprapubically, or by combined rectal and suprapubic palpation. In children especially is palpation of inestimable value. Thompson's stone searcher is of value in many cases. It must be distinctly remembered that a cystoscopic examination is superior, by far, to the many and varied measures advocated; there is possibly one exception, and that is, as above stated, in young children. By means of the cystoscope we can at the same time determine the condition of the bladder, etc. Calculi formed of phosphates or calcium oxalate may be clearly detected by means of the x rays. It has been found that urates do not possess this property. In all suspicious

cases, and in cases of prostatic hypertrophy—especially, the cystoscope should be employed. AN EARLY DIAGNOSIS IS, IN ALL CASES, OF THE UTMOST IMPORTANCE.

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### THE TREATMENT OF VESICAL CALCULUS.

In discussing the treatment of stone in the bladder Aretaeus wrote:

“For it (a large stone?) can neither be broken by a draught, nor by medicine, nor scraped outwardly, nor cut without danger. For the small ones of the bladder are to be cut out, but the others prove fatal the same day, or in a few days, the patient dying from spasms and fevers; or, if you do not cut him, retention of urine takes place, and the patient is consumed slowly with pains, fevers, and wasting. But if the stone is not very large, there is frequently suppression of urine; for by falling readily into the neck of the bladder, it prevents the escape of urine. Although it be safer to cut in these cases than for the large stones, still the bladder is cut, and, although one should escape the risk of death, still there is a constant drain of water; and although this may not be dangerous, to a freeman the incessant flow of urine is intolerable, whether he walk or whether he sleep; but is particularly disagreeable when he walks.”

The ancient Egyptians and Indians practised lithotomy. They were also prone to try to dissolve stones by internal medication. Celsus presented the technic known as the “apparatus minor.” Very few instruments were necessary. The operator fixed the stone by means of two fingers introduced into the rectum; the calculus was held against the neck of the bladder, and made to bulge towards the perineum. An incision, transverse or curvilinear, was then made; very little or no attention was given to the anatomical relations.

In 1524 Marianus Sanctus, a student of Marion, described the latter's lecture, the chief point of which was the employment of the grooved staff.

Frere Jacques is said to have originated the operation commonly known as lateral lithotomy, while Manzoni of Verona was the first to practise the median operation. In 1556 Franco first described the high operation—the so-called suprapubic lithotomy.

In 1813 Grinthisen proposed that vesical calculi should be broken up by drilling; he invented several instruments for this purpose but they were never employed—to any extent at any rate. A few years later Civiale presented a litho-tripteur, but the instrument was pro-

bably never used in the human. In 1824 Civiale succeeded in performing lithotrity even though the instruments were very crude. In 1831 the Danish surgeon, Jacobson, demonstrated the fact that stones might be crushed by simple pressure.

During the year 1878 Bigelow took advantage of the researches of this and succeeded in removing the crushed stones by way of the urethra; to this technic he gave the name litholapaxy.

Today it has been fairly agreed that lithotomy is the preferable operation. Median lithotomy is essentially an incision unto the membranous urethra, followed by dilatation of the prostatic urethra. Drainage is readily accomplished.

Peterson and Garson were the first to call attention to the advantages of introducing a rubber bag into the rectum, and subsequent inflation. At the present time the surgeon has become appreciative of the superiority of simple boric acid. By distending the bladder by means of warm boric acid solution the suprapubic operation has lost many of its objectionable features.

The size of the stone and the general condition of the patient regulate quite materially, the technic employed. In many instances the suprapubic will be found superior to the median operation.

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## BOOK REVIEWS

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**THE ABDOMINAL AND PELVIC BRAIN WITH AUTOMATIC VISCERAL GANGLIA.** By BYRON ROBINSON, B. S., M. D., Chicago. Author of "The Peritoneum," etc. Professor of Gynecology and Abdominal Surgery in the Illinois Medical College, etc. Published by Frank S. Betz, Hammond, Ind.

This is another one of the stupendous works of the author which will endure for all time. It contains about seven hundred pages, profusely illustrated. No anatomist can do without this volume. It gives an immense amount of research in the anatomy and physiology of the solar plexus and the cervico-uterine ganglion. There can be no question as to the superior merit of this work; it will take years, however, for its practical points to penetrate the knowledge of the common practitioner. Dr. Robinson has already taken the position as America's leading anatomist. The future will only accentuate his position. There is nothing in the English language which has taken so much labor to produce as this volume. Every student of medicine should read it.

**PARAFFIN IN SURGERY.** A critical and clinical study, by W. H. Lockett, B. S., M. D., Attending Surgeon, Harlem Hospital; Surgeon, Mt. Sinai Hospital Dispensary, and F. I. Horn, M. D., Assistant Surgeon, Mt. Sinai Hospital Dispensary, New York City. With thirty-eight illustrations. Surgery Publishing Co., 92 William St., New York. 1907.

This little booklet of 118 pages is a review of the literature of the subject, and a report of the work done by the writers. Lockett and Horn have found that the melting point of the paraffin should be above 110 degrees F. Many of the unsatisfactory results heretofore encountered may be prevented by proper technic. The volume will be found of value to those intending to employ paraffin in the treatment of suitable cases. Paraffin has found a large field of usefulness. The volume is of decided value.

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**TRANSACTIONS OF THE AMERICAN CLIMATOLOGICAL ASSOCIATION.** This volume of 303 pages contains the monographs presented at the 1906 session of the association. Dr. Loomis pleads for the systematic study of climatology in the medical schools. Dr. Pyror emphasizes the importance of deep breathing. Dr. W. C. Glasgow calls attention to the fact that in selecting the location for a tuberculous patient, the latter's temperament must be duly considered. Almost all of the twenty-seven monographs presented, are good. The volume indicates clearly the high character of the organization.

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**LEA'S SERIES OF POCKET TEXT-BOOKS.** Diseases of Children. A Manual for Students and Practitioners, by George M. Tuttle, M. D., Professor of Therapeutics, Medical Department of Washington University, St. Louis. Series edited by Bern. B. Gallandet, M. D. Second edition, revised and enlarged. Illustrated with five plates in colors and monochrome. Lea Brothers & Co., Philadelphia.

We unhesitatingly recommend this as the best manual on pediatrics for the general practitioner.

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